DOCUMENT RESUME

ED 174 351 PS 010 778

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TITLE Effects of Pre-Service Preparation and Children's Facial Characteristics on Child Care Workers' Assessments of Handicapped and Nonhandicapped Children: Project Report for Student Funded Research, Bureau of Education for the Handicapped.
INSTITUTION Pennsylvania State Univ., University Park. Coll. of Human Development.
SPONS AGENCY Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.
BUREAU NO OE-P-443AH80012
PUB DATE [79]
GRANT G007800004
NOTE 125p.

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS *Child Care Workers; Child Development Specialists; College Students; *Expectation; *Handicapped Children; *Interpersonal Attraction; Nurses; Photographs; *Physical Characteristics; Rating Scales; Special Education Teachers; *Trainees

ABSTRACT

The nature of the relationship between the handicapped child's stimulus characteristics and the expectation held for that child by child care professionals provided the focus of this study. One hundred and twenty subjects viewed photographic slides of 30 children with differing facial characteristics and estimated the capabilities of the photographed children. Subjects represented three types of child care preparation programs -- special education, nursing, and child development -- and a comparison group of non-child care students. Slides had been previously rated for the physical attractiveness of the photographed child, the presence of clinical manifestation of dysfunction, and the quality of the photographic reproduction. Subjects were randomly presented with slides classified as attractive/normal, unattractive/normal, attractive/abnormal, unattractive/abnormal, and pre- and post-operative slides of children with craniofacial anomalies. Information relating to the experience of self-reported personal characteristics of the subjects also was obtained. Analysis of the data revealed that the attractiveness of the child plays a significant role in the judgment of functional capabilities, made from photos, for all subject groups. Children with unattractive faces were consistently scored lower in functional capability than children with attractive faces. Judgments of subject groups were equivalent. Self-reported characteristics of the subjects were not significantly related to their ratings of children's appearance and intelligence. (Author/RH)

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Division of Individual and Family Studies

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Project Report for Student Funded Research
Bureau of Education for the Handicapped

Project Director: Donald L. Peters, Ph.D.
Professor of Human Development

Student Researcher: Veronica DeCarolis Feeg, R.N., M.A.

This research was funded under Grant # G 007800004, Project Number 443AH80012 of the Office of Education, Bureau of Education for the Handicapped, U.S. Department of Health, Education and Welfare, CFDA:13.443A, Appropriation 7580282.

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HUMAN DEVELOPMENT
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ABSTRACT

The current educational emphasis on "mainstreaming" handicapped children and providing them with the least restrictive environment for development has the potential for greatly expanding each handicapped child's social world. Efforts to enhance the child's spectrum of life means that the child is likely to come into contact with more people in general, and more professional service providing groups specifically. Included within the service provider groups are medical and health care professionals, special educators, child care workers, early childhood educators, and other child development specialists.

The expanding social world of the child represents a part of the developmental context within which the child's handicapping condition must be viewed. The handicapped child, already a victim of functional interference or possessing deviant physical or behavioral characteristics, continuously influences his or her social environment. The child is both a responder to the environment and a stimulus for the behavior of others. The nature of the relationship between the child's stimulus characteristics and the expectation held for that child by child care professionals provided the focus of this study.

One hundred and twenty subjects estimated the capabilities of 30 children with differing facial characteristics from photographic slides. An equal number of subjects represented three types of child care preparation programs--special education, nursing and child development--and a comparison group of students not engaged

in child care training. The slides had been previously rated for the physical attractiveness of the photographed child, the presence of clinical manifestation of dysfunction, and the quality of the photographic representation. Subjects were randomly presented with slides classified as attractive/developmentally normal, unattractive/developmentally normal, attractive/developmentally abnormal, unattractive/developmentally abnormal, and pre- and post- operative slides of children with craniofacial anomalies. Information relating to the experience and self-reported personal characteristics of the subjects also was obtained.

The data were treated as a triple replication of the unattractiveness dimension for three conditions of childrens' photographs. Regression analysis were used to investigate the relationship of subject personal characteristics to their ratings of childrens' capabilities. Analyses of the data revealed that the attractiveness of the child plays a significant role in the judgment of functional capabilities, made from photographs, for developmentally normal, developmentally abnormal and pre- and post- operative children. Children with unattractive faces were consistently scored lower in functional capability than children with attractive faces. However, no differences were found in the judgments of functional capability across subject groups. The judgments of nursing, special education, child development and non-child care students were equivalent. Additionally, no significant relationships were found between self-reported characteristics of the subjects and their ratings of children's appearance and intelligence.

The results do not support the notion that the general training of child care specialists makes them less subject to bias in their ratings of unattractive children. Further work would need to be done to determine whether highly specific training would be useful for insuring a less negatively reactive social environment for the handicapped/unattractive child.

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This research was funded under Grant #6007800004, Project Number 443AH80012 of the Office of Education, Bureau of Education for the Handicapped, U.S. Department of Health, Education and Welfare.

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ACKNOWLEDGEMENTS

At this point in my career, I wish to express my appreciation for the thoughtful assistance I have received in the production of this research from the many individuals who guided me along the way.

I am deeply grateful to Donald L. Peters, chairman of my dissertation committee and project director, who has given me the encouragement to pursue my own professional directions with the perspective, insight and skills from a developmental and interdisciplinary framework. He has contributed greatly to my academic and personal growth, and I will continue to carry signs of his training in my future professional roles.

I would like to express my appreciation to my minor advisor, John Salvia, who brought meaning to my experience in special education and stimulated my thinking concerning the nature of biases and exceptionalities. I would also like to thank the other members of my dissertation committee, Louise F. Guerney and Vladimir deLissovoy for their contributions to this work.

I would like to thank my fellow trainees on the Pre-PAIR training grant, Carol Wegley Brown, Nancy Busch Rossnagel, and Scott Brown, for their contributions to the theoretical framework of this project, which resulted from our many hours laboring over interdisciplinary issues.

A special thanks goes to the agencies and parents who assisted me, as well as the photographers, who helped in developing the materials necessary for this research, and the children in the photographs. Also, I would like to acknowledge the assistance and

cooperation of the Institute of Reconstructive Plastic Surgery at the New York University Medical Center, and Dr. Joseph McCarthy.

I would like to gratefully acknowledge the interest and support from the Bureau of Education for the Handicapped, Department of Health, Education and Welfare, without whose support this research could not have been conducted.

Finally, I would like to express my deepest thanks to my husband, Alan, who assisted in developing materials for this project and helped to provide an atmosphere in our family which facilitated my doctoral education and professional career.

CHAPTER I

INTRODUCTION

The nature of a child's handicapping condition must be viewed within a developmental context. The handicapped child, already a victim of functional interference or possessing deviant physical or behavioral characteristics, is continuously influencing the reactive environment. That is, the child is both a responder to the environment and a stimulus for the behavior of others.

The current emphasis on educational "mainstreaming" and providing the handicapped child with the least restrictive environment means that the child's social world is expanding. Efforts to enhance the child's developmental environment by integrating him or her into the broader spectrum of life means that the child comes into contact with more people in general, and more professional groups specifically. The mainstreamed child receives services from a wider variety of professionals, including medical and health care professionals, special educators, child care workers, early childhood educators, and child development specialists.

Statement of the Problem

While it is usual to question whether young handicapped children are ready for their expanding social world, it is equally important to question whether the professionals with whom they will

have contact will be ready for them. If such professionals hold biases against the handicapped child or if they have negative expectancies about that child's development, the outcome of their interaction could be detrimental. Negative expectancies that lead to a self-fulfilling prophecy of low achievement, poor adjustment and limited social competence for visibly impaired children need to be avoided if educational mainstreaming is to succeed.

For many professional groups, prior experience with young handicapped children has been very limited. The question then arises, how will these professionals respond to the child? Do the child's stimulus characteristics, such as physical appearance, create biases in their overall judgment of functional capabilities? Are some persons more inclined to be biased than others? If so, what characteristics in their background explain this susceptibility? Can training change the susceptibility to negative biases?

Answers to these questions are necessary if one is to describe the expectancy conditions that may be instrumental in influencing the caregivers' behavior. This can be particularly important for staff working with facially disfigured children who may be normal aside from their esthetic handicap.

Recognizing stimulus characteristics of the handicapped or non-handicapped child, a trained staff member may be able to discriminate the salient cues and resist response biases. In addition, and more importantly, agencies providing service to mixed populations of children might begin to identify, in staff selection procedures, characteristics of individuals that are more suitable and less reactive to visibly stigmatized children.

The problem investigated in this study has three parts:

1) Do subjects with child-care-related training differentiate between diagnostically important facial cues and the general characteristic of the attractiveness of the child when assessing the functional capabilities of children?

2) Do groups of subjects with different types of pre-professional training differ from each other when assessing the functional capabilities of children?

3) Are personal factors including self-assessments of subjects own characteristics, preparation and experience related to their assessments of the functional capabilities of children?

Developmental Context

Nature of Handicapping Conditions

Organismic developmental theory suggests that the child carries with him certain behavioral (e.g., temperamental) and/or physical (e.g., constitutional) characteristics of individuality, that evoke differential reactions in significant others and can influence the child's further development (Lerner, 1976). This suggests that the child posesses epigenetic qualities that provide an important contributory source of behavioral outcomes when the interaction of constitution and environment are taken into account. Whether the etiology of epigenesis lies in nature, nurture, or a combination of the two has been a controversial question among developmental psychologists. An interactionist position, in any case, necessitates that

the environment must always be taken into account if one desires to understand the qualitative changes emerging along the organism's developmental continuum. This includes exogenous and endogenous, simultaneous or sequential events, acting on and within the organism throughout its life span. These qualitative changes represent the emergence of phenomena that one cannot simply reduce to original levels. The developing child becomes both the initiator of and result of interaction with the environment.

A child may be born with or contract a constitutional defect, either as the result of a genetic fluke or traumatic experience. This defect becomes an "impairment" for the child as it interferes with what would have been a normative pattern of development. This is expressed as a "disability," in that the child now lacks the capability of normative functioning. This deviation in physique or functioning becomes a "handicap" as the result of its expression in an incompatible or reactive environment; it is both the outcome of this formula as well as initiator of sequential patterns of interaction. The label may be static by itself, but the conditions of the handicapped child are dynamic phenomena.

Nature of the Child's Environment

The importance of physical characteristics as stimuli affecting the behaviors of the perceiver has often been the subject of investigation in the field of human development. A stimulus can exist only in the environment which can perceive it to be so. The impact of that stimulus is dependent upon some responsive condition in the environment which can discriminate its stimulus quality (e.g., figure-

ground), and which has learned the effect of such a stimulus. The perceiver comes to the interactional event with a developmental history as well. In this complex assortment of interactions, one must maintain an awareness of the developmental process through continuous assessment of the transactions between the child and his or her environment in order to determine how these transactions facilitate or hinder development as both the child and his surroundings change (Sameroff and Chandler, 1975).

Relevance of the Study

Relationship to the "Mainstreaming" Emphasis

Current legislation has encouraged and even mandated a greater integration of handicapped and nonhandicapped children in our educational institutions. Child care workers, child development personnel, educators, special educators, health care personnel and numerous other professionals are being called upon to service children from a broader range of capabilities. The handicapped child's peer and adult social world has been expanded by law to introduce him or her to a variety of individuals who will assume responsibility in contributing to his or her optimum development.

The handicapped child probably possesses some identifiable trait, whether it be a visible stigma or merely an educational label. In any case, the outcome of this child's behavior will depend on the interactional patterns with peers and adults, whose experience may be limited.

In any social interaction, it is the face that mediates between the individual and others. The visibly unattractive child possesses obvious characteristics which become stimuli to the observer. The unattractive features of a disabled child may even trigger negative reactions or response biases from an inexperienced, unprepared, and susceptible individual.

The real concern has been the possibility that pupils might be prevented from attaining levels of achievement they were capable of merely because of stifling effects of low teacher expectations.

Relationship to Staff Selection and Training

Of the problems associated with selection of staff for child care, Chambers (1971) stated:

> If we were confronted by a problem such as water pollution, it is unlikely that we would attempt to solve it by untrained well-intended volunteers. We would employ an individual who is both accredited, trained and experienced to test, diagnose, and recommend solutions to the problem. Yet with problems in child care, many still assume that because each of us was once a child, anyone can give adequate care. (p. 395)

Staffing programs for exceptional children provides an even greater concern. Young children with special needs and away from their own parents and family models must be served by persons who are well prepared as well as tempermentally suited for the work. Typically, no formal tests are used in the selection of staff members. Many jurisdictions for early child care programs have required and recommended standards, although only the requirements have a legal base. As early child care is becoming more widely defined as developmental programming for young children, particularly for special children, there is a concomitant recognition of the need for highly

skilled personnel with specialized training (Peters and Kostelnik, 1979).

If a particular "sensitivity" to child stimulus characteristics exists among professionals, it would be important to initiate remediation. Implications for intervention can be discussed from two aspects: (1) cosmetic intervention for the child to reduce the stimulus; and/or (2) "desensitivity" training for staff individuals to teach them to discriminate salient cues from nonsalient characteristics in assessing the condition of the child.

Objectives for the Study

This investigation was designed to provide information concerning the nature of response biases across such functional areas as cognitive capability, socio-emotional stability, motor performance and health as related to the child's physical attractiveness or unattractiveness. In particular, it explored the relationship of differently prepared child care workers and their reactions to appearance of diagnostic and nondiagnostic children's facial traits presented in photographs, and their estimates of functional capability levels based on observational skills. The analysis was thought to provide a beginning description of the characteristics of the individuals who are more "reactive" to the negative stimuli and less likely to discriminate the nondiagnostic value from unattractive appearance of facial traits.

The specific objectives for the study included the following:

(a) to identify the relationship between appearance and functional assessments of children with facial deviations;

(b) to demonstrate a difference in functional assessments of attractive and unattractive children (these included normal attractive and unattractive children, handicapped attractive and unattractive children, and children with facial anomalies before and after craniofacial surgery);

(c) to identify differences in functional assessments of children without diagnostically significant clinical traits by personnel of varying types of preparation; and

(d) to demonstrate a relationship between child care workers' personal characteristics including preparation, experience, and degree of self-acceptance and self-satisfaction and their discriminating ability in rating children's functional capabilities.

Review of Literature

The following section is a review of the literature of physical appearance and the relationship of attractiveness and attitudes or responses from the social environment. It is reviewed in the context of the interactive conceptual framework of somatic deviance and social responsiveness.

Somatic Deviance Framework

Impairment - Disability - Dysfunction. "Disability" can be described as a deviation in body or functioning that results in a functional inadequacy in view of environmental demands. This

deviation is relative to the context in which it operates. "Handicapping" may be viewed as an imposition upon the disabled child as problems, disadvantages, social censure (e.g., reinforcement decrement) are generated by the manifestations of the disability (Smith and Neisworth, 1975). A somatic deviance model will be used to describe "handicapping" as a circular phenomenon.

Smith and Neisworth (1975; Neisworth, Jones and Smith, 1977) describe somatopsychology as the study of the impact of bodily deviation on behavior which, combined with psychosomatics or impact of behavior on the body, constitutes a reciprocal and self-feeding vicious cycle of pathology. The outcome, or handicap, might be the sequelae of socially compounded behavior problems of body or behavior origins. Smith and Neisworth summarize the process as follows:

1. A child has some deviation.
2. The environment includes demands or expectations that make success less probable.
3. The problem, in that particular environment, becomes a disability.
4. Social, emotional or academic burden is imposed on the child.
5. The handicap becomes amplified, focusing attention on the deviation which becomes a cue or stimulus to others.
6. Behavior of others changes, eg., lowered expectations, pity, restricted interaction.
7. The child internalizes responses of others, feels less competent, continues to be less successful, which increases the stimulus properties of the deviance cue.
8. The handicap is amplified, and contributes back into the process (pp. 171-172).

Stimulus Characteristic Capability and Response Limitation.

The child's handicap originates as a functional deficiency arising from an expression of two distinct characteristics of the deviance (see figure 1):

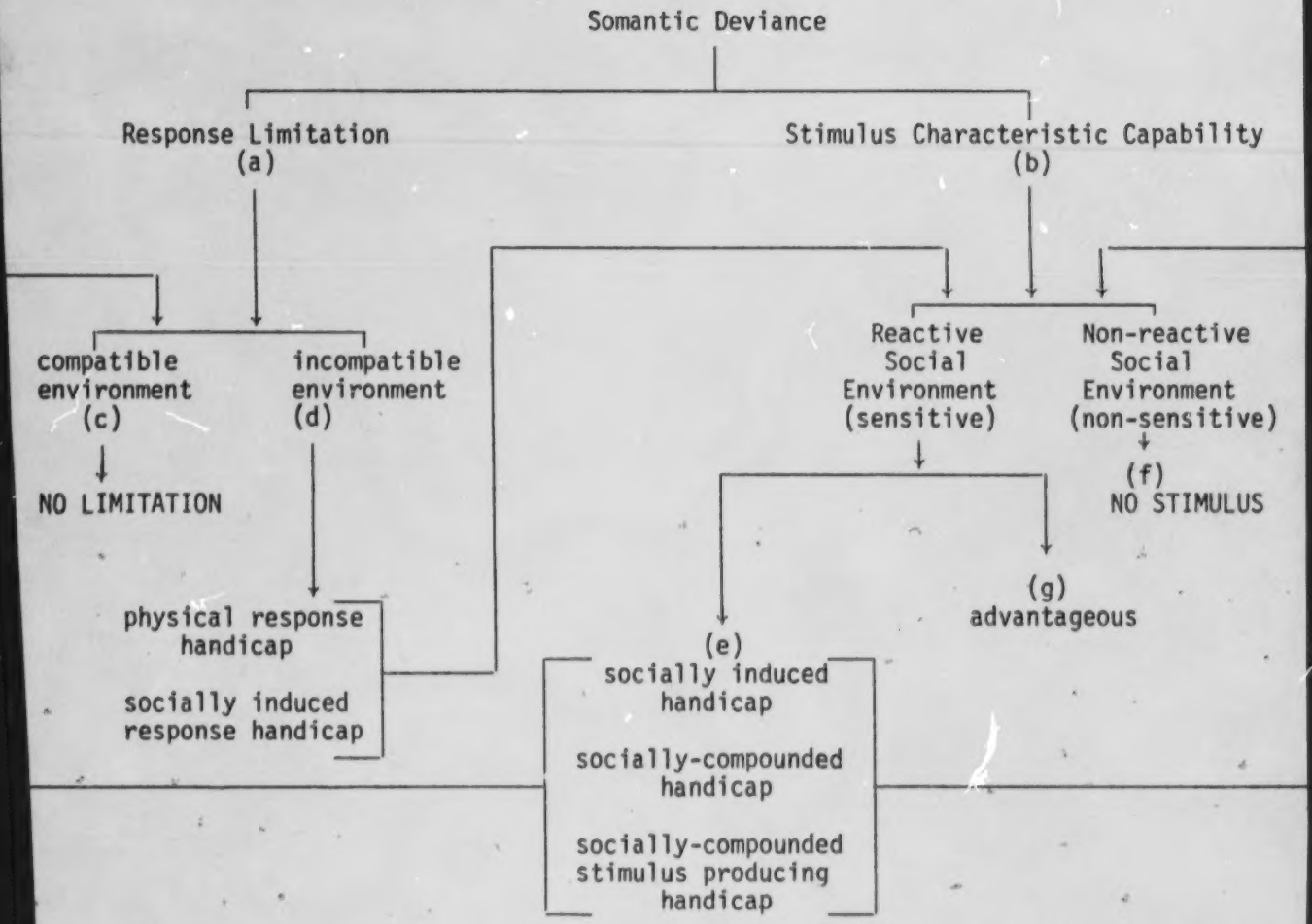

Figure 1. Somatic Deviance

(1) the stimulus capability (b) of the defect that may (e) or may not (f) elicit a reaction from the environment; and

(2) a response limitation (a) or interference of normal functioning due to the impairment in an "incompatible" (d) normal environment. Note here that a dysfunctional interaction does not exist if (1) the environment is either compatible with the response limitation (c), (2) the responding environment does not react to the stimuli, thereby eliminating the stimulus potential (f), or (3) the environment discriminates the stimulus capability of either the impairment itself or the functional limitation, but for some reason it becomes a desirable attribute. The functional expression of the defect then becomes advantageous (g).

The following is a simplistic example of this self-perpetuating cycle. A child with a dwarfism condition begins with the somatic deviance of shortness. This condition is a visibly recognizable deficiency and, therefore, a potential stimulus (b). To the normal social environment, the classroom of other same-age children, this difference can be perceived as deviance; to a social environment of younger, smaller children, this difference might not be discriminated at all, and would therefore not be a stimulus (f). In the regular classroom, the child's peers might respond negatively to the shortness stimulus by teasing, lowering expectations, or reducing their interactions with the child. The small child might respond to this with negativistic behavior (socially-induced handicap), or possibly calling attention to the deviance with baby-like mannerisms (socially compounded handicap). Unknowingly, the child may have increased the stimulus capability of the stimulus quality of the shortness characteristic.

If for some reason shortness were a desirable quality, possibly for "hiding" in child games, then the deviance might function advantageously for the child by facilitating friendship formation.

Shortness may also constitute a response limitation. In the

physical environment of a classroom with smaller furniture, the limitation may be minimized, or might not exist. However, in the regular classroom, the short-limbed child is at a functional disadvantage and is impaired in the mobility processes which other children may take for granted. The child requires special assistance to open doors, look out the windows, or write on the blackboard (physical response handicap). The negative responses of those who aid the child may evoke a socially-induced response handicap, such as dependency. The sequelae of the response limitation can also feed back into the cycle as a stimulus characteristic.

Physiognomy as a Strong Elicitor of Social Responses

The stimulus properties and response limitations of the disabled child create a process of somatic deviance feedback. As a stimulus, physical appearance that is deviant in its social environment (depending on the sensitivity of that social environment) may be considered as a set of cues that set the occasion for certain behaviors of others. The response of the social environment acts to alter the behavior of the person presenting the cues.

Neisworth et al. (1977) discussed one's physical appearance as a specific set of cues. As these environmental response behaviors act to alter the behavior of the person presenting cues, the stigma of possessing a deviant feature increases. Meyerson (1963) suggested that children who have physical disabilities and stigmata tend to have more frequent and severe psychological problems than do their

nonhandicapped peers.

The cueing property of a feature is related to the clarity, or discriminability of the deviation. The degree to which an individual is reacted to as deviant is dependent on the visibility of the presenting cue. In our culture, preoccupied with beauty and attractively packaged products, a facially unattractive child presents a noticeable deviation, particularly if the cue is intense. Katz (1977) stated that some children are undeniably unattractive, and they know it because adults show it. Many adults do not master their negative reactions to an unappealing youngster.

When children of deviant appearance are avoided or subjected to a reduced schedule of normal interaction, they are clearly deprived of opportunities for positive reinforcement and modeling of constructive behaviors. Frequently maladaptive behaviors force the attention of others who inadvertently reinforce them (Neisworth et al., 1977). The child whose face is scarred, whose eyes are assymetrical, whose mouth is deformed, may be able bodied in all respects, but is, nevertheless, handicapped and devalued.

Physical Impairment as a Stigma

Goffman (1963) suggested that the onset of "stigma learning" by the person presenting a disability may be gradual or sudden. He described the stigma of disability as "a deeply discrediting attribute." The characteristic may of itself have a disturbing effect on others.

Researchers investigating adult face-to-face interaction have demonstrated evidence that nondisabled adults behave differently, such as exhibiting more discomfort in interactions with disabled persons.

Comer (1972) studied the interactions between physically disabled persons and physically normal persons to explore whether or not the interpersonal discomfort holds true on the other side of the face-to-face interaction as well. Comer's focus was on the behavior of the disabled person. Interview situations were created in which a confederate served as either a physically normal or disabled interviewer. Disabled subjects interacting with a physically normal interviewer terminated the interview sooner, showed greater motor inhibitions, smiled less and demonstrated less eye contact with the interviewer than with a visibly disabled interviewer. They also admitted feeling less comfortable during the interaction. These findings suggest that the stigma associated with strong physical cues may contribute to the pathology of the interaction on both sides.

The Physical Attractiveness Variable

Berscheid and Walster (1974) postulated the existence of a physical attractiveness stereotype where attractive persons are believed to possess more socially desirable characteristics and to be more intelligent than unattractive persons. In their review of attractiveness literature, it may be summarized that for a variety of reasons and explanations, physically attractive individuals are "preferred" in the social context from "first meeting" through "marrying." If the existence of physiognomic theories, "...what is beautiful is good" reflects the personality and characterological inferences people generally make on the basis of appearance, then it is possible that people prefer to associate with attractive others, who can better reward them in that association.

Miller (1970) identified a pattern of association of characteristics with physical attractiveness and unattractiveness. These tendencies are strong determinants of first impression formulation. In this study, subjects were given photographs, previously [illegible]ied as high, moderate or low in physical attractiveness, and were instructed to record their impressions on an adjective variable checklist. A consistent pattern emerged from these data, that of the unattractive person being associated with the negative or undesirable pole of the adjective scales and the highly attractive person being judged significantly more positively. Dion, Berscheid and Walster (1972) showed similar results of attractiveness. They stated that attractive people of both sexes were expected to be sexually warm and responsive, sensitive, kind, interesting, modest, sociable, and outgoing. Physically attractive people are perceived to be more likely to possess personalities deemed as socially desirable.

Differences in Expectancy of Children's Performance as a Function of Physical Attractiveness

Goodman, Richardson, Dornsbusch and Hastorf (1963) suggested that consistent with earlier findings (Richardson, Goodman, Hastorf and Dornsbusch, 1961), cultural values are acquired in the socialization process and patterns of preferences of various handicapped children emerge. Typically, adults and children preferred least the obese child and the child with facial disfigurement. This preference holds true for children from specific ethnic and cultural backgrounds, in this case low socioeconomic Jewish and Italian children who would rank facially disfigured and obese children higher. Goodman et al. attributed these differences to the possibility that the results of social

learning in different cultural milieus may account for this; for example, it is speculated that because positive associations accompany "eating" in Jewish and Italian families, that obesity is not a socially stigmatizing conditions.

Physical Attractiveness and Teacher Judgments. Generally, teachers form their first impressions of children from observation of the child, the child's behavior, and supplemental information available. How much of this can be attributed to the appearance of the child has been a widely investigated area. The literature supports that teachers' expectations for the child are strongly related to the child's physical appearance, perhaps mediated by other factors. A child's unattractive face would probably elicit lower expectations for the child's performance.

Clifford and Walster (1973) investigated this question by attempting to influence teachers' expectations by manipulating the attractiveness of a photographed child presented to the teachers, and controlling objective information provided. Their hypothesis was that a child's attractiveness strongly influenced his or her teacher's judgments: the more attractive the child, the more biased in his favor teachers were expected to be. They demonstrated that unfamiliar attractive children would be rated as possessing greater intellectual potential, better social relations, and as more likely to become successful in life than unattractive children. The limitation of this study was that physical attractiveness could be one of many salient variables operating.

Ross and Salvia (1975) attached photographs of independently

scored unattractive and attractive children to identical case studies of mildy handicapped children. Teachers with experience indicated that unattractive children would have more academic and social difficulty and were more likely to recommend special class placement for unattractive than attractive children.

Rich (1975) demonstrated that the effects of a child's attractiveness remained operative beyond first impressions. However, it was unlikely that these effects were especially potent. Rich requested teachers to evaluate a vignette presented to assess cause, judge personality and assign blame to an unattractive or attractive child presented in a photograph. When the teachers received additional information in the form of a report card, attractive children received more favorable evaluations than unattractive children with differences occurring between sexes on personality scores, but not for assignment of blame nor recommendations for punishment. Rich felt that it appeared unwarranted to postulate a general physical attractiveness stereotype and that this differed in form, rather than degree, as a function of the sex of the stimulus person.

On the basis of independent ratings of facial appearance, Richman (1978) separated children into two groups matched on intellectual, behavior and achievement data. Analysis of teachers' estimates of intellectual functioning suggested that teachers rated the intellectual ability of cleft children with more noticeable facial disfigurement less accurately than cleft children with normal facial appearance. Within the group of cleft children with more noticeable facial defects, teachers underestimated the ability of brighter children and overestimated the ability of less-bright children.

Unattractive children, unfortunately, appear to elicit differential interpretations of their behavior. Dion (1972) tested the hypothesis that the severe transgression of an attractive child was less likely to be seen as reflecting an enduring disposition toward antisocial behavior than that of an unattractive child. Data supported this hypothesis and furthermore revealed that the transgression itself tended to be evaluated less negatively when committed by an attractive child. Unattractive children were considered more likely to commit a similar misbehavior in the future and they were characterized as more "dishonest" and "unpleasant." It becomes increasingly difficult for scientists and clinicians as well to attribute behavioral differences, particularly negative transgressions, to the unattractive child, without considering the evaluator's part in the interpretation.

Physical Attractiveness and Child Performance. Evidence of a positive relationship between attractiveness and perceptions of intellectual potential becomes crucial in the light of findings which demonstrate that there is a positive relationship between teachers' attitude toward a student and the student's subsequent performance (e.g., Palardy, 1969; Rist, 1970; Seaver, 1973).

The effects of expectancy have been studied by numerous professionals. Meichenbaum and Bowers (1969) examined the effects of expectancy instructions on the academic and classroom behavior of institutionalized adolescent female offenders. Girls who were identified as "late bloomers" to the teachers significantly improved in their academic performance on objective, although not on

subjective exams. The expectancy instructions appeared to have a differential effect on the teachers' classroom behavior, showing increased positive interactions with the expectancy subjects.

Recognizing that differential expectancies for the appearance of children does not constitute evidence of differences in performance, Salvia, Algozzine and Sheare (1977) investigated the effect of facial attractiveness in natural settings to ascertain if there was a relationship between attractiveness and pupil performance. Both norm referenced assessments of school achievement and the teachers' judgments of the child's progress in the curriculum served as evaluations for the child. Results demonstrated a significant main effect for attractiveness with report card scores, however, only in one class did attractive children receive higher scores than unattractive children on the standardized tests.

Adams and LaVoie (1974) manipulated physical attractiveness, sex, and the child's classroom conduct and asked teachers to rate children of pre-scored attractiveness on behavior. Conduct, as measured by reported evaluations on grade cards, had a greater effect than physical attractiveness on teacher expectancy. These findings suggest that the saliency of physical attractiveness as an influential variable on impression formation can change, depending on the nature of other information available to the observer.

Salvia et al. (1977), on the other hand, suggested that attractiveness can be implicated for teachers' biases, and may support evidence of the impact of the attractiveness dimension as being of longer duration in light of the fact that report card data were collected in the last grading period of the year. The hypothesis that

teachers' judgments are influenced by the child's appearance, and subsequently of teachers' evaluations through report cards, could be supported. This does not imply that any causal relationship can be identified in the complexity of interactions operating. For example, early experiences of the unattractive child in the classroom, and especially with his classmates, might be unpleasant, even painful. Aversion to school is detrimental to educational accomplishment.

While it has been documented that cleft children as a group do not display significant psychopathology, Richman (1976) investigated the possibility that there may be commonly identifiable behavioral or emotional characteristics occurring in children with a highly visible defect such as cleft lip and palate. Findings supported the conclusion that children with cleft lip and/or palate showed significantly greater inhibition of impulses and lower educational achievement. These children also performed significantly lower on overall basic skills achievement test scores. These conclusions suggested that the visibly defective child may be a less confident and less competitive youngster.

Physical Attractiveness and Peer Social Relationships. Because of social reaction to deviant features, it is little wonder that persons with a negative deviation of high visibility often develop multiple additional deviations in self- and other-oriented behavior (Neisworth et al., 1977). As Berscheid and Walster (1974) have remarked:

> If it is true that children of different physical attractiveness levels receive differing socializations, and if it is also true that differential treatment is consistent across a variety of situations--following a negative stereotype for

> the unattractive child and a positive set for treatment of attractive children--then the physical attractiveness level of a person should affect his life in a number of ways. One might expect, for example, that attractive people might differ from the unattractive in their perceptions of themselves and their life situations, and in certain personality characteristics as well (p. 195).

Langlois and Stephan (1977) suggested that stereotypes associated with physical attractiveness are stronger determinants than ethnicity of peer preference among various ethnic children. In this study, male and female kindergarten and fourth grade Black, Anglo, and Mexican American children were shown prescored photographs of attractive and unattractive children from each of the three ethnic groups. Langlois concluded that attractive stimulus children were liked more, were perceived as being smarter, were rated higher on sharing and friendliness and lower on meanness and hitting other children. The attitudes and behavioral expectations of Black, Anglo, and Mexican American children toward children of their own and other ethnic groups are strongly and consistently influenced by physical attractiveness. The highly attractive child seems to be at a social advantage both within his or her ethnic group and with members of other ethnic groups. It would seem, then, that a child's appearance has wide ranging implications for friendship choices, peer interaction and ethnic relations.

Similar conclusions have been reached by Lerner and Verdirame (1977). The psychosocial developmental milieu of the attractive child appears to be more favorable than that of the physically less attractive one. It was expected that the unattractive child experienced negative and rejecting peer relations, the perception of maladjustment by both teachers and peers, as well as the belief of less

educational ability by teachers. In such an interactional climate, the child might very likely have developed the very behavior and characteristics expected by others. The predicted covariation among attractiveness, peer and teacher appraisals, and actual functioning were supported.

In natural settings, interaction behaviors have been described with various observation techniques. Sociometric data were obtained by McCandless and Marshall (1957). In this procedure, preschool age children were asked to point to photographs of children mounted on a large board whom they especially liked and disliked. Each photograph was rated independently (by adult judges) for attractiveness. McCandless and Marshall's findings included speculation of a developmentally changing phenomenon. As predicted, the unattractive boys were liked significantly less than were attractive boys, regardless of age. The very young unattractive girl, on the other hand, was significantly more popular than her attractive peer; with age, however, she declined in popularity, while her attractive peer increased such that the older attractive girls, as with the boys, were significantly more popular than older unattractive girls. It would seem that perception of and response to attractiveness, at least in female children, might also be a function of age.

Langlois and Downs (1977) also suggested age-related differences in dyadic behaviors of attractive and unattractive children. Indpendently rated children were observed in crossed dyadic play sessions. Clear differences were apparent when the aggressiveness of both the child and his or her peer were examined. Overall, results indicated that behavioral differences did, in fact, exist between

attractive and unattractive children and that these differences were found most clearly among aggressive behavior, activity, and sex-stereotyped behaviors rather than positive social behaviors. While there were no differences in frequencies of aggressive behavior between attractive and unattractive three-year-olds, higher frequencies of aggressive behavior were found among five-year-old pairs which included an unattractive child and among five-year-old female unattractive pairs. Once again, this suggested some phenomena operating through some social learning process.

Physical Unattractiveness as a Handicap. Physical unattractiveness is a serious and debilitating esthetic handicap for some individuals. In an interview in the Clinic for Reconstructive Plastic Surgery, a patient stated to Macgregor (1974) "...My face is what separates me from humanity." For the facially deviant, prejudgments are usually derogatory, even stigmatizing, tending to hamper satisfactory social interaction. The unattractive child carries this stigma into his or her social world and it functions as a stimulus characteristic in the interaction process.

It has been demonstrated in the expectancy literature that the facially unattractive child is expected to perform less well than the attractive child. It may be an even stronger expectancy function than that attractive children are perceived to perform better; in fact, it is not uncommon many people assume that the facially defective child is likely to be mentally retarded as well. This label calls upon strong social and emotional associations by others, as well as additional expectancies (Gottlieb, 1975). Macgregor

revealed that cases are known of malformed children being mistakenly placed in institutions for the mentally retarded. If children are treated as though they were retarded, they can become socially impeded, respond accordingly, and in turn falsely validate the original assumption. Examples of nonretarded children with funny-looking faces in today's special classes and occasionally in institutions, demonstrate the nature of the socially-induced handicap: it may be that many of our ugly handicapped children might have only been ugly children in a less sensitive and an unbiasing environment.

Macgregor suggested that even physicians may unquestionably accept the association of mental deficiency with congenital malformation. It is a surprise to medical staff to learn that such a child is exceptionally bright.

The physically unattractive child must learn to function in a negative if not unaccepting social world. How this occurs, if it does, is still open to question. Adams (1975) pursued the notion that attractive and unattractive individuals internalized somewhat different personality characteristics and social behavior. Findings supported that physical attractiveness was positively associated with self-acceptance, internal control, and sensation-seeking behavior, however, the etiology and sequence of the development of these characteristics was not addressed. Moreover, few longitudinal studies other than clinical case presentations have been offered to the literature dealing with the social world of the facially deviant child.

Many children today are being identified as suitable patients for dental and plastic reconstructive surgery. Advances have been made in the past ten years which have improved the outcomes of many surgical

procedures. The following is a case taken from Macgregor's Transformation and Identity, of a ten-year-old child from the surgical population at New York University Medical Center, Institute of Reconstructive Plastic Surgery:

> Bobby was good looking except for conspicuous lop ears. He never referred to them, nor did his parents. For two years they had been concerned about more "serious" problems, Bobby's incontinence of urine. At school the teacher complained that he failed to concentrate, cried easily, was sometimes incontinent, and his grades had fallen below average...At the prospect of having his ears corrected, Bobby was delighted...(and admitted) that other children made fun of him, nicknamed him "Dumbo"...A month after surgery, Bobby's mother reported that his eneuresis had ceased and that both his school work and his behavior had shown marked improvement (p. 128).

Cosman (1974) stated that even for handicapped children with facial abnormalities, surgery undertaken to improve appearance plays an important part in the rehabilitation of the handicapped child. In some instances the handicap itself is a cosmetic one. If there is little possibility of altering the child's basic disability, the improvement of some part of the defect or of general appearance may prove beneficial in total rehabilitation.

It is also imperative that we understand the impact and importance of cosmetic intervention as it relates to the child and his or her social others. Early intervention may be enhanced by physical correction of deformity, or unattractiveness, through conservative methods of altering appearance to more extreme efforts of cosmetic and surgical correction.

Facial Traits in Clinical Diagnosis

Clues in Assessment. The face provides the diagnostician with a plethora of clues about the child. A trained observer can describe

facial dimensions and configurations in relation to assorted known congenital and/or developmental anomalies. Some professional groups are specially trained in observation skills which, combined with touching, tapping and listening, comprise the basis of assessment and diagnosis.

Facial Alterations in Dysfunctional Conditions. Much of the current pediatric literature has been devoted to "funny looking kid" syndromes, a precisionless description of children with manifold anomalies. Partly because of the lack of precise standards, accurate description of the face has been deficient. Nonetheless, the face of an abnormal child is observed by all about him and reacted to by that social environment which is sensitive to its difference regardless of its label. Characteristics which are abnormal are rarely considered attractive traits by reacting individuals.

Some of these facial traits are diagnostic physical deviations for identifying assoicated developmental dysfunctions:

> The facies in Downs' syndrome is usually quite distinctive The head is brachycephalic with the occiput flat and the neck short and broad. The tongue tends to protrude and exhibits papillary hypertrophy and furrowing. The palpebral fissures are oblique, sloping downward nasally; there are prominent epicanthal folds. The iris is often speckled (Brushfield's spots), the spots being arranged in a ring concentric with the pupil (Gorlin, Cedano and Boggs, 1975).

Many other facially recognizable dysfunctions include conditions such as cretinism, microcephaly, Delange syndrome, Hurler's syndrome, or Gargoylism, and others.

Facial Alterations Not Associated with Mental Impairment. Some conditions present only facial anomalies while others are accompanied by a multitude of associated clinical alterations that are present in practically every system. There are still other facial characteristics which are highly deviant in structure but are unrelated to organic, neurological or brain compartment size and should constitutionally not be related to the development of the child.

> Achondroplasia is probably the most common of the chondroplasias. Patients are short, with a large head, a relatively short trunk, and stubby limbs. In the skull the endochondral bone of the base is severely affected but the membranous bone of the vault is practically normal. The difference in growth results in a large head with frontal bossing, a small foreamen magnum, a "scooped-out" face with relative nasal depression. A number of affected children die from compression of the brain stem during the newborn period. Mild hypotonia with early slow motor progress is noted, however, intelligence is normal (Gorlin et al., 1975).

In Crouzon's disease and in Apert's syndrome, premature closure of the bony sutures produces a hypoplasia of the midface and alters the development of the cranial base. The child takes on a flat face appearance, large bulging eyes, and appearing to be intellectually dull. This is not necessarily true.

Surgical Correction in Plastic Reconstructive Procedures. Cephalometric tracings serve as an aid to the surgeon's clinical judgment in planning and performing facial surgery. These are done on X-Ray and other facial tracings, where measurements are done on the bony configuration of the face. The aim of the surgery is to establish harmony between frontal, mid-facial, and mandibular positional relationships (Firmin, Coccaro, and Converse, 1974). In persons with Crouzon's disease or Apert's syndrome, the goal of the procedure is

to relieve the constricted and retruded position of the midface and advance it anteriorly and downward. This is done by procedures such as LeFort III Osteotomy, and frontal bone advancements (see Firmin et al., 1974; Converse and Smith, 1962; Converse, Woodsmith, McCarthy, and Coccaro, 1974; Tessier, 1971).

Craniofacial surgery is a major procedure involving neurosurgeons, orthodontists and others along with the plastic surgeon. Technical advancements have rapidly been made in the field, and improvements in the child appear to be worth the investment for children and parents. The results contribute to remarkable overall changes in the child's life.

The Child's Social and Academic Environment

Children today, especially children with special needs, are spending more and more time in some sort of organized child care. Their social world consists of many unrelated parent or teacher figures that they might not have socialized with had they spent time at home. These adults arrive in the positions from a variety of preparations and backgrounds.

Grotberg (1971) reviewed that there is apparently a high degree of agreement that formal educational requirements are not necessarily indicative of quality of staff. It is important, however, that agencies employ careful selection procedures in determining the skills, traits, and personality characteristics of the "right person" suitable for the job.

Beller (1971) emphasized that with increased social need and acceptance of professionalization in child care, it is imperative that

we focus on a major dimension which will be most crucial to healthy child development, that is, the adult-child interaction.

A stable person giving consistent personalized care enables the child to develop trust in others and in himself; it allows him to explore and gain mastery over his environment, and to gradually regulate his own behavior. Personalized care requires knowledge of essential developmental changes. Flexibility must be maintained if care is to be personalized. Many of these unplanned components of the caregiver's role may be referred to as the "style" of the individual, which is dependent upon the personality traits and attitudes of the caregiver and have great bearing on the interaction.

Training, personality and role concepts have been found to be important determinants of teachers' functioning. Prescott, Jones and Kritchevsky (1967) found that teachers with little or no training used restriction most often in disciplining the children and guidance least often. As the amount of teacher training increased, her attitudes toward authority became less arbitrary, and her attitudes of warmth increased. It was projected that lack of training could surround the child with experiences of harsh and strict discipline, arbitrary authority and emotional rejection. Combined with a response bias to negative stimuli, such as physical unattractiveness and limited training, the child care worker might actually interfere with the exceptional child's development in a mixed setting. Program quality should increase as the amount of special training of teachers increases.

As cited earlier, there is a general concensus that teachers are vulnerable to producing biased responses to expectancy and attractiveness stimuli. It therefore becomes critical to understand the relevant

components of the child care worker's perception of severity of the disabled child. Those responsible for children with disabilities may well be unaware of their values and expectations about the handicapped, and yet communicate these to the disabled child and to other children. Planning for training programs may assist in remediation of these responses. Becoming aware of our own perceptions and values is prerequisite to change behavior and values.

Qualities Sought in Child Care. Based on interviews with Day Care center directors, Chambers (1971) compiled a list of categories outlining qualities sought in staff. From this notion of "the right person," directors apparently agreed on several qualities and descriptors of the successful child care paraprofessional. These include characteristics such as: basic liking for children, empathy for children, flexibility, bright, accepting of family, and lack of prejudice. This lack of prejudice quality is illustrated from the interviews by the sample quote "...avoid the worker who 'looks at the child as poor child' rather than as an individual."

Another quality described in the interviews was that the person did not seek fulfillment of own needs through children, that the person held outside interests as well. This suggests, along with the lack of prejudice quality, that the individual entering child care should be self-satisfied and self-accepting as well as accepting of children and parents. Self-acceptance has been associated with general acceptance of others by Berger (1952), Omwake (1954) and others.

Self-acceptance in Relation to Acceptance of Others. It has been suggested that the relationship between attitudes of the self and acceptance of others indicated that self-rejection may be a factor in individual hostility towards others. Sheerer (1949) operationally defined acceptance of and respect for self and acceptance and respect for others and demonstrated that these could be defined and objectively rated with a satisfactory degree of reliability.

Berger (1952) developed a group instrument and concluded that there was a significant relationship between feelings toward the self and feelings toward others. This instrument has been used by Streitfeld (1959), who hypothesized that therapists who are more accepting of the self and others are better therapists as rated by their supervisors. Streitfeld, however, failed to support this hypothesis.

Personal Satisfaction and Response to Deviation in Others

Responses to facial deviations are probably as diverse as the characteristics of the responder. In the introduction of Macgregor's Transformation and Identity (1974), Margaret Meade speculated, although research had been limited, that "those who are most repelled by the disfigured are those who are also most dissatisfied with their own faces, those to whom very small and almost imperceptible defects loom disproportionately large." It would seem that self-satisfaction or self-acceptance would be influential in a child care worker's response to appearance and functional assessment of children.

Summary

Children's facial characteristic traits vary across a range of appearance, whether diagnostically or nondiagnostically "loaded." The range extends from attractive or pleasing to the observer, to extremely unattractive or unpleasant to the observer. It would be reasonable to suspect that level of preparation and experience, or assessment skills, might alter these perceptions; also, that these appearance responses will be differentially related to personnel's functional estimate depending on the level of preparation and amount of experience, and personal satisfaction as a rating of self-acceptance. The prepared observer assessing functional potential may carry over his ability to discriminate the traits on the basis of a diagnostic feature and predict functional deficit outcome from this referent. The unprepared observer may lack this ability and rather rate functicnal deficit on the basis of a personal esthetic reaction.

CHAPTER II

METHOD

Overview

This investigation was divided into two phases of operation. The first phase of the procedures included the operations to organize and pre-categorize the stimulus materials used in the second phase. This set of materials consisted of a packaged slide presentation of photographs of children's faces, score sheets for recording responses, and written instructions. In the second phase, subjects were identified from different professional training programs according to specified eligibility criteria. These subjects viewed and rated the stimulus materials.

Subjects

The participants were selected from the population of students at the Pennsylvania State University. All were at least senior undergraduate students.

The student groups were stratified on the basis of an assumed level of preparation for education and work with handicapped children. Participants in the two high preparation groups included:

Group A - Special Education.

(1) Thirty senior or graduate student special educators who have taken courses about disabled children in the Education of Exceptional Children program (EEC 400, Introduction

to Exceptional Children; EEC 410, The Mentally Retarded), and

(2) have had experience in two (2) terms of organized practica with young exceptional children (EEC 205, Experience with Exceptional Children; EEC 403, Clinical Teaching with Exceptional Children; EEC 405, Practicum in the Education of Exceptional Children).

Group B - Nursing.

(1) Thirty senior students or graduate nurses in the nursing curriculum who have taken courses working with children in NURS 331 (Nursing Care of Children and Adolescents) and NURS 425 (School Health Nursing), and

(2) have had experience in two (2) terms of organized practica with young children.

Participants in the two low preparation groups included:

Group C - Child Development.

(1) Thirty senior students or graduates in child development or early education who have had courses about young children in the early education programs (Individual and Family Studies, or Academic Curriculum and Instruction or other Early Childhood Education programs),

(2) have had no special education or nursing coursework or experience, or were in their first special education course, and

(3) have had no organized practica experience in settings with handicapped children.

Group D - Control.

(1) Thirty senior or graduate students in service programs unrelated to child care (e.g., nutrition and food services, man-environment relations, gerontology).

Participants were contacted by phone, written notice, or classroom announcement and scheduled to meet at designated times for a classroom or individual presentation of pre-categorized slides. The majority of participants performed the task in groups which varied in size from 5-to-10 at a time. Several participants met in smaller groups or individually to accommodate scheduling. This type of

setting was comparably represented in all four groups.

The total time of participation of each subject was approximately 45 minutes. Monetary incentives were given to nonclassroom activity participation in order to encourage assistance in the study. The incentive of $3.00 was paid in full whether the participant completed the task or not.

Sample Selection

A random sampling procedure of selecting participants was carried out on the stratified lists generated by student records. Participants chosen for the study were brought together in small groups to observe a randomized slide presentation. Subjects were considered suitable for the investigation if they met the appropriate eligibility criteria. A comparatively small sample of men for these professions met the designated criteria of the design, as might have been expected. It was important, therefore, to test for specific sex effects to allow for controlling the sex variable if differences existed.

The initial sample consisted of 135 undergraduate senior and graduate students from the four specified professional training groups. The age, sex, level of education, experience, and family composition of the subjects is shown in Table 2.1. Inspection of the initial sample revealed no obvious differences for age, education, or experience between the identified training groups, with the exception of sex.

TABLE 2.1

Age, Sex, Level of Education, Experience, and Family Composition of the Eligible Subjects (N=135)

	Number	Percent
Age		
19-21	81	60
22-25	31	23
26-35	21	15
36-over	2	2
Sex		
Males	20	15
Females	115	85
Level of Education		
Senior undergraduate	104	77
Post baccalaureate	20	15
Post masters	11	8
Experience		
None	51	38
Personal or Professional	47	35
Personal and Professional	37	27
Family		
Own children	5	4
Without children	130	96

Testing for Sex Effects

To test for sex effects within professional training, the two educational groups having sizable male compositions were analyzed. These two professional groups consisted of 18 males and 51 females in the low preparation control (nonchild care training) and high preparation (special education) groups. The total competence scores for each cell of appropriate photographs was calculated from the procedures in Phase II, and the scores given to each category of children

were analyzed by professional group and sex. A simple analysis of variance failed to show any significant differences for sex in child ratings at the .05 level. The means and standard deviations for ratings in each category by sex are shown in Table C1 in Appendix C. It was therefore decided that sex would not effect the within preparation groups' factor. A total of 30 random subjects from each of the four stratified levels of specialized training were selected for the final analysis.

Setting and Materials

The setting for the procedure was a classroom of approximately 30 desks or by individual appointment in a small office. The presentation program was given several times to insure handling a manageable number of participants in each setting. A slide projector and screen were set up in the room.

The research activity consisted of a presentation of 34 randomly ordered, pre-selected and judged slides of young children's faces which the participants were instructed to rate on ten dimensions in written rating scale form at the time of presentation (see Appendix A). Each participant had a scoring packet of sheets and scales with checks provided during the presentation to assure proper slide-score sheet correspondence. The first two slides and two additional slides mixed in the presentation were designated as practice pictures in order to accommodate initial errors and incompletions, and were not used in the analysis. The slides had been previously categorized on

the variables of interest and will be described in detail in the following sections.

Apparatus

A timed slide changing device was used with the slide projector. While the slide was in view, subjects scored each slide on ten items. Each slide appeared for approximately forty-five (45) seconds. The package of materials consisted of a list of ratings per slide to be completed during the presentation of each slide, followed by personal inventory questions for the participant.

Procedures

The activities of the project were divided into two phases. Phase I dealt with the development and pilot testing of the instruments to be utilized in the project. This included activities of selecting and coding project slides: the diagnostic and attractive-unattractive appearance ratings of the six sets of slides. Phase II was the actual activity of carrying out the project design with the four samples of undergraduate and graduate students. This activity consisted of presentation and scoring of the six categories of slides by each student of the four represented groups.

Pilot testing also included reliability testing of the measurement instruments to ascertain the consistency of the tool.

Interrater correlations of attractiveness, and test-retest analysis were used to determine the reliability of the subject ratings. Modificiations of the scale and procedures were made with preliminary pilot data results.

Phase I: Procedure of Collection of Stimulus Pictures

From a variety of sources, approximately 300 photographs of children's faces were collected. These were obtained from clinical photographs of children undergoing reconstructive plastic surgery, from instructional slide programs, and from pictures taken of various children in special preschools and at home. The slides were initially screened for suitability in an attempt to sort similar techniques, dimensions, and range of attractiveness.

Sorting and Selection. One hundred one photographic slides were initially selected and randomly ordered. These slides were shown to a sample of 40 adult judges with backgrounds similar to those individuals selected for the subject sample. Each slide was scored on a five-point attractiveness scale, from extremely unattractive (1) to extremely attractive (5). The judges viewed each slide for five seconds and scored the child on a simple score sheet. The entire procedure lasted approximately ten minutes.

Each child's photograph was given an attractiveness score based on the mean and variance of the forty judges' attractiveness ratings. The slides were then rank ordered from lowest score to highest and the median score of attractiveness was identified: median = 2.65. The mean score of the attractiveness ratings was approximately the

same: mean = 2.63. Each of the 50 slides whose attractiveness score was greater than the median score was then considered a suitable "attractive" child. Each of the 50 slides whose attractiveness score was less than the median score was considered a suitable "unattractive" child. Ultimately, ten attractive and ten unattractive slides were selected for final inclusion of the stimulus set.

The two groups of 50 slides were again screened for diagnostic load. Two groups of nondiagnostic (normal) and diagnostic (developmentally abnormal) pictures were sorted on the basis of a sequential decision-making process. The first factor considered was the source of the photographs. Pictures purchased as instructional materials were accompanied with clinical information on each syndrome. Those slides of children with syndromes that included information indicating a high likelihood of mental retardation or developmental lag were considered to be slides of developmentally abnormal children. Diagnostic traits were noted. Those slides obtained of children from the preschool for handicapped children were considered to be slides of developmentally abnormal children. Only those with obvious diagnostic traits documented in clinical information, however, were considered for the final selection. Diagnostic or developmental testing information was included if it was available.

The children in the remainder of the slides were considered to be normal if there was no evidence to indicate a mental or developmental impairment. Clinical and psychological information was obtained on the children in the photographs obtained from the Institute of Reconstructive Surgery. Information concerning the child's developmental or school history were noted from each child's record

or from interviews with the clinic staff. Children in the craniofacial population typically have different personalities and behavior characteristics than other children. If the child is mentally retarded, it is usually in addition and not directly associated with the facial disfigurement. In some instances, it was necessary to decide on the normalcy of the child if the facial defect which the child had did not usually, of itself, indicate organic involvement.

The slides were then divided into two groups of 65 nondiagnostic and 36 diagnostic slides. A total of 10 slides of normal and 10 slides of abnormal children was finalized, crossed with attractiveness and unattractiveness. Developmental information is provided in Appendix B for each of the slides finally chosen.

A frequency distribution of the attractiveness scores of the 101 slides was calculated and a histogram made. The distribution of scores for the total set of slides is presented in Figure 2. These demonstrate range of attractiveness of children in the photographs. It is also evident that the photographs selected to this point represented a wide range of appearance of the 101 children and were symmetrically distributed.

The frequency distributions of the attractiveness scores of the two groups of slides were also compared (see Figure 3). The identified slides appear to represent a normal and similar frequency configuration for both normal and abnormal groups of children. Although the median score of diagnostic children's attractiveness ratings was slightly lower than the total median score, there was still a sufficient number of pictures suitable for the "attractive diagnostic" category.

The slides were then sorted into four categories of attractiveness

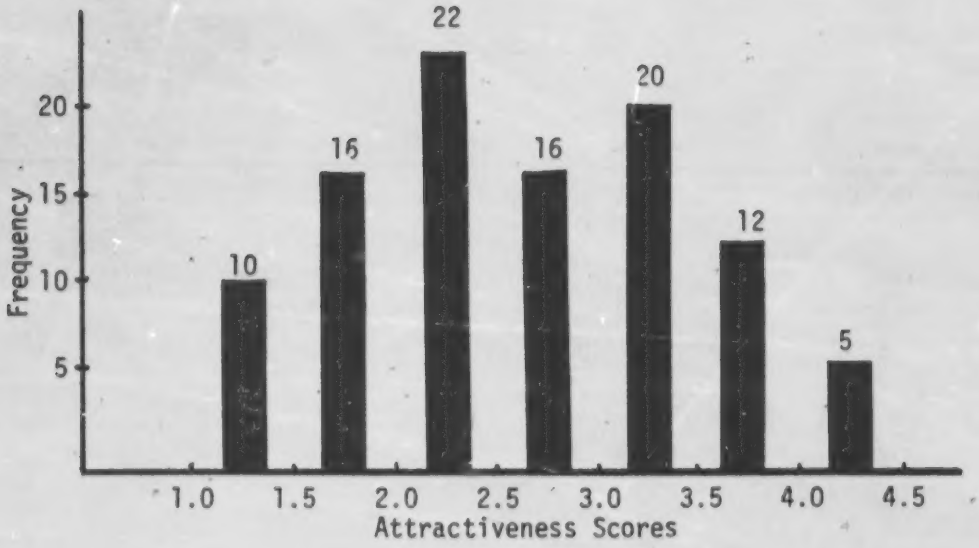

Figure 2. Frequency of Mean Attractiveness Scores of Total 101 Photographs

Mean = 2.63 Median = 2.65 Variance = .685

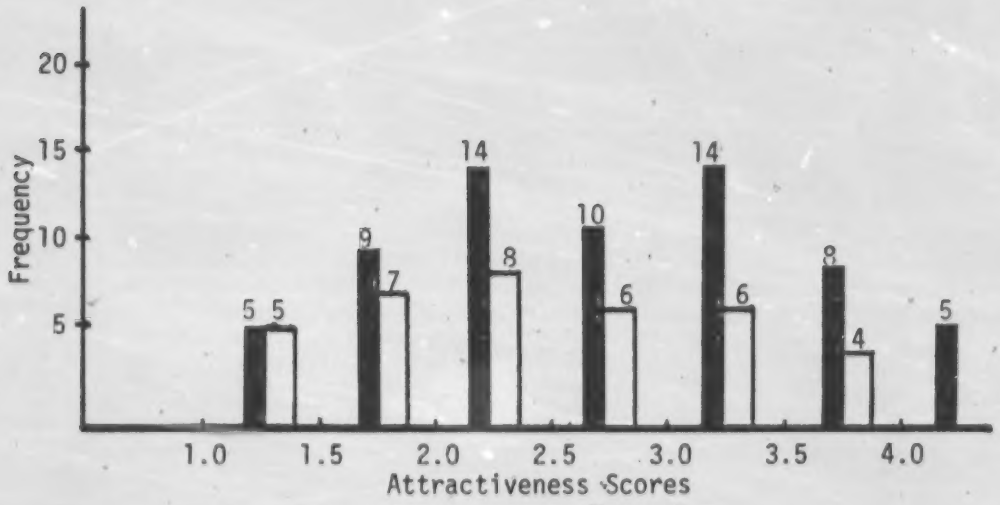

Figure 3. Frequency of Mean Attractiveness Scores of Non-diagnostic (Black) Diagnostic (White) Photographs Sorted into Two Groups

Nondiagnostic		Diagnostic	
Mean = 2.73	Median = 2.82	Mean = 2.43	Median = 2.35

x-diagnostic "load." Two additional categories, pre-operative and post-operative pictures, were isolated. Each child in these categories had been photographed before and after reconstructive plastic surgery for a craniofacial defect. A total of 30 pictures were selected. The five photographs in each category with the smallest variance in attractiveness (from the judges' ratings) were selected for each of the established categories. For the surgical cases, the photographs were chosen if the pre-operative pictures' mean attractiveness score fell below the original median established. Two of the five cases in the post-operative group did not receive attractiveness scores higher than the original median; their cosmetic improvements did not necessarily constitute an attractive improvement. Any significant differences found for these groups of pictures would therefore represent a conservative estimate of actual differences. Figure 4 represents the categories of slides identified.

Validation of Categories

The final 30 slides were of good quality, minimized defects due to shadows, etc. and represented comparable photographic techniques (i.e., clinical and non-clinical type pictures). The categories also contained a nearly equal mixture of posed facial expressions, (e.g., smiles and frowns). The children portrayed on each slide were primarily facial focus, with some portions of the upper torso when possible to demonstrate proportion and size. A comparison of the slides in the three-x-two categories is shown in Table 2.2.

The potential influence of the vertical dimension of the facial presentation was also tested. Measurements of the face in the

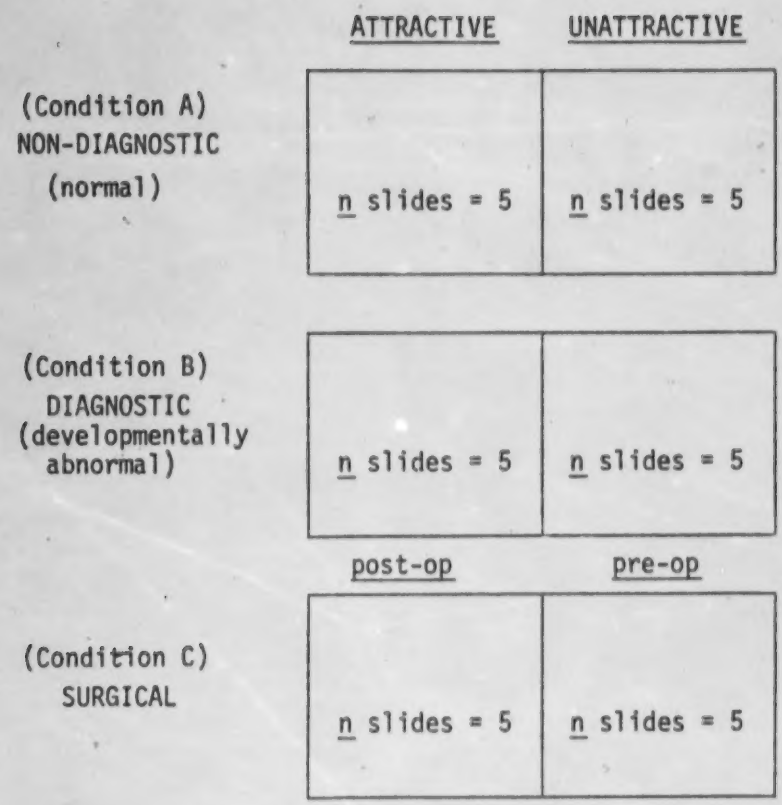

Figure 4. Categories by Appearance and Condition, with the Number of Slides Selected for each Cell.

TABLE 2.2

Means and Variances for Picture Sets

	Facial Attractiveness Scores[1]				Slide Dimensions[2]	
	Attractive		Unattractive		Attractive	Unattractive
	Mean	Var.	Mean	Var.		
	4.43	.507	2.20	.472	7.5	8.5
Non-Diagnostic	4.25	.500	1.95	.305	7.0	7.0
(Normal)	4.15	.438	1.60	.297	9.5	9.5
	3.20	.164	1.55	.562	6.5	9.5
	2.98	.435	1.25	.192	10.0	11.2
Group Totals $\bar{X}$	3.80		1.71		8.1	9.1
Variance	.438		.137		2.4	2.4
F Ratio		38.04**			1.13	
	3.53	.410	2.33	.481	9.5	9.5
Diagnostic	3.15	.438	1.83	.167	9.5	8.2
(Abnormal)	3.13	.420	1.67	.267	8.5	8.0
	3.13	.728	1.67	.267	9.0	8.0
	2.95	.408	1.17	.167	8.5	7.5
Group Totals $\bar{X}$	3.18		1.73		9.0	8.2
Variance	.045		.172		.25	.56
F Ratio		47.82**			3.55	
	3.93	.584	2.30	.318	10.0	7.5
Facial Surgical Group	3.35	.797	1.78	.589	9.0	7.5
	3.05	.408	2.28	.256	10.0	10.0
	2.58	.404	1.60	.400	10.0	7.5
	2.45	.664	1.73	.717	9.5	12.5
Group Totals $\bar{X}$	3.07		1.94		9.7	9.0
Variance	.360		.108		.20	5.0
F Ratio		13.73*			.471	

*p < .01

**p < .001

[1]Attractiveness score is based on independent 5-point ratings of physical appearance by 40 subjects: 1 = extremely unpleasant.

[2]Slide dimensions are measurements in centimeters of face from chin to forehead with image projected of frame = 15 x 10 cm.

photograph were taken for each projected picture. These vertical measurements did not significantly differ for any of the categories. These measurements also appear on Table 2.2. The appearance dimension is significantly different for attractive and unattractive slides in all three categories of normal, developmentally abnormal, and surgical cases (see Table 2.3).

Research Design

The research design was a comparative analysis on several fixed dimensions of random subejcts stratified from four fixed levels of preparation. The hypotheses suggest relationships between measures of appearance and measures of functional capability, categorized into several dimensions of competence: (1) cognitive competence; (2) social competence; (3) perceptual-motor competence; (4) emotional stability; and (5) health.

TABLE 2.3

Mean Cell Scores of Attractiveness and Tests of Significance for 6 Stimulus Categories Identified

	Normal	Abnormal	Surgical	F Ratio
Attractive	3.80	3.18	3.07	2.76
Unattractive	1.71	1.73	1.94	.565
F Ratio	38.04**	47.82**	13.73*	
t	6.167**	6.916**	3.705*	

*p < .05
**p < .01

The hypotheses also suggested that repeated measures across competency areas and appearance ratings would differ among subject groups, depending upon the preparation, personal characteristics and experience of the raters; factors of educational preparation, experience, and self-competence scores should predict the extent to which an individual is affected and influenced by appearance in judging intelligence.

Definitions

The pre-service child care worker was defined as a senior undergraduate or graduate student who is enrolled in an early childhood program at the Pennsylvania State University.

Level of preparation was an educational level defined on the basis of meeting criteria specified in stratifying groups (see Subjects).

Appearance ratings. Appearance was rated by subjects as a quartile estimate of the child in the photograph as the subject feels that child would rank in a normal distribution of children.

Attractiveness and unattractiveness were judged by the selection panel in order to establish the number of slides meeting attractiveness and unattractiveness crossed with diagnostic and nondiagnostic categories.

Diagnostic load. The slides which portray characteristics of children that are clinical manifestations of known developmental abnormalities were defined as diagnostic photos. Those slides which did not carry typical characteristic defects for developmental abnormalities were categoriezed as nondiagnostic (normal).

Functional capability ratings. The best estimate of placing the child viewed in a quartile distribution by the participants was defined as the functional capability rating. The participant was asked to rate the child from low to high as the child would compare to all children or nine dimensions representing five areas of competence.

(1) cognitive competence was the average rating on intelligence and school achievement scores;

(2) perceptual-motor competence was the average ratings in motor performance, physical coordination and athletic ability scores;

(3) social competence was the rating in social competence;

(4) emotional competence was the average ratings of stability and personality scores; and

(5) health rating scores.

Index of influence. The extent that the individual is influenced by the unattractive appearance in nondiagnostic traits and attractive appearance in diagnostic traits in predicting intelligence was the individual's index of influence. The amount of influence in an individual's score was measured as a Pearson correlation of the rater's appearance and intelligence scores across all pictures that are theoretically unrelated by design. In other words,

the slides selected for this 2-x-2 matrix were designed to approximate a zero correlation of attractiveness and intelligence. The higher the correlation, the more the individual was influenced by appearance in estimating intelligence. Each subject's index of influence represented this exploratory data point.

Phase II: Procedures of Data Collection

Protocol, Instructions and Materials. Each participant was informed that the nature of this investigation was to ascertain individual differences in skills of observation. This investigator presented photographs of children's faces, and each participant was instructed to observe the face and formulate his or her best judgment of functional capability for that child. These were scored in the materials packet on the Child Comparison Instrument. Written instructions were provided in the packet, and oral instructions were variations of the following:

> "You are about to see a slide presentation consisting of thirty pictures of children's faces. We are asking you to use your observation skills to make the best estimate of the ten characteristics listed in the instructions for each child. On each page you will find a normal distribution curve. These are marked off in quartiles. We would like for you to consider the range of all children and for each picture, designate how you think this child would compare to other children in the ten listed dimensions.

You need to know that you will be observing a broad range of children that vary widely in appearance. At the conclusion of the session, we would like you to use the same method to score yourself on ten dimensions. These are also listed in the packet materials as the Personal Comparison Scale."

The Child Comparison Instrument. The Child Comparison Instrument (CCI) was developed and modified following pilot testing for efficient scoring of subject responses. Each subject scored all ten responses in 45 seconds. Variables were defined as singular or average composite raw scores from the subject responses. The variables to enter the analyses were identified as follows:

Cognitive Competence (COG)--mean comparison scores of intelligence and school achievement;

Perceptual Motor Competence (PMO)--mean comparison scores of physical coordination, athletic ability, and motor performance;

Social Competence (SOC)--comparison score of social competence;

Emotional Competence (EMO)--mean comparison scores of emotional stability and personality;

Health (HEA)--comparison score of health.

Reliability. Thirty-one of the research subjects viewed and scored the first eight slides of the randomized experimental set on a second occasion approximately one hour later. On the second viewing, the slides were shown in reverse order (i.e., slide #8 through slide #1). The scores of these subjects were used to calculate the test-retest stability of each variable and potential order effects. The median of the correlations of composite scores ranged from 0.794 to 0.856. T tests were calculated to assess mean score differences for each variable on the test-retest data. These were all nonsignificant. Results are shown on Table 2.4.

TABLE 2.4

Correlations and t Tests for Test-Retest Variable Scores on Random Slides (n=31)

Variable	Median Correlation	t
COG	.823	-.32
PMO	.856	1.21
SOC	.797	1.14
EMO	.794	.00
HEA	.809	-.16

The Self Comparison Scale. The Self Comparison Scale (SCS) was constructed to complement the operation which each subject performed on the viewed slides. The instructions and procedure are identical to those given for the quartile comparison of self ratings of appearance, professional and personal competence. The scale was included in the materials packet and was completed at the close of the session (see Appendix A).

Reliability and Validity. To test for internal consistency on this likert-type scale, coefficient Alpha was computed on responses from a subset of subjects selected at random (n=49). Alpha for this self-rating ten-item scale was 0.886, and the item analysis is shown in Table 2.5.

TABLE 2.5

Item Analysis: Self Comparison Scale

Number of observations = 49 Number of response categories = 8
Number of items = 10

Mean total score = 60.5
Standard deviation = 7.1
Error of measurement = 2.3
Coefficient alpha = 0.886

Item	Item total r
1	0.570
2	0.767
3	0.606
4	0.767
5	0.668
6	0.817
7	0.770
8	0.785
9	0.654
10	0.707

To test for sequence effects of ranking "others" before and after "self," a random subsample of subjects (n = 23) was given the SCS form before viewing the slide presentation and these ratings of this group were compared with those of 23 subjects who rated themselves after viewing these slides. The mean ratings for the two groups did not differ significantly (t = .12).

To demonstrate validity of the Self-Comparison Scale, a random subsample of participants completed the Self-Acceptance Scale de-developed by Berger (1952) and discussed in the literature review. This was done at the end of the slide viewing session. The correlation of the SCS and the Berger Self-Acceptance Scale for this group (n=49) was 0.649, $p < .05$. The SCS could be accepted as a reasonable self-comparison rating scale for purposes of this study.

Subject Characteristics. The self-comparison scores were identified as raw scores for each subject from the SCS measurement. These scores ranged from 42 to 74, with a mean of 60.1. The levels of preparation were obtained by assigning scores of "1" to control, "2" to regular teachers, "3" to nurses, and "4" to special educators, as considered in the low to high stratification of education related to exceptional children. The experience score was obtained from the profile data and simply coded as "0" for none, "1" for personal or professional experience, and "2" for personal and professional experience with handicapped children.

Processing the Data. In the first set of analyses, the variables from the CCI were identified and clustered into categories of appearance and diagnostic load, (i.e., developmental condition). A multifactor univariate analysis of variance was performed ($Subjects_{30}$ in $Groups_4$ x $Appearance_2$ x $Capabilities_5$). Thirty subjects were nested in four levels of preparation. The rating scores for the slides were grouped by appearance categories and five dependent measures of capability. Analyses were conducted for each condition

specified as normal, developmentally abnormal, and surgical

In the second set of analyses, three characteristics of the subjects (self-comparison score, level of professional preparation, and amount of experience with exceptional children) were used as predictors of an index of influence through the use of multiple regression techniques. For each individual, this index was calculated to represent the extent to which he or she is influenced by the child's appearance to judge capability. This score was established as the correlation coefficient of the relationship between each individual's scores of the children's appearance and intelligence. These indices ranged from 0.228 to 0.968.

Discussion. Several general statements can be made from the analyses of the measures presented. It should first be stated that each of the measures may be considered psychometrically acceptable, within limitations, for the purposes of this study. The rapidity of the procedure necessitated the construction of a suitable device to record multiple responses. The instruments developed served to elicit efficient and reliable variables from a sample of adequate size.

The design of clustering photographs for each category served to manipulate the independent variable of appearance, maximize the experimental variance, and control for extraneous influences that may have otherwise introduced systemmatic error. Factors such as smiles, lighting, background or photographic technique might have constituted such external variables.

The comparison method of measure can only serve as a general description of capabilities. Each subject was instructed to compare the child on dimensions that were not operationally defined constructs by this investigator. The subject was allowed to define those dimensions however he or she would in comparing this child to all children. One would, therefore, be cautioned not to conclude more strongly than that the child compares "higher" or "lower" than other children for any particular competence.

The index-of-influence measure served only as some representation of appearance and intelligence relationship judgments. The true nature of the relationship may only be speculated because of a number of subjective factors including stereotypic base, knowledge of other empirical data, or merely prediction of the experimental intentions.

Hypotheses

This study investigated the effects of attractiveness and unattractiveness of children's facial traits on the assessments made by undergraduate and graduate students. It also tested for differences in assessments between specially prepared child care workers. The examination of effects were divided into three separate and parallel analyses, described as three conditions for the study: (A) developmentally "normal" children, or nonhandicapped children (without diagnostic facial traits), (b) developmentally "abnormal" children, or handicapped children (possessing diagnostic facial traits), and (C) children with craniofacial defects before and after surgery.

Finally, the relationship of individual characteristics of each observer and the extent to which the observer is influenced by appearance were explored. The following are hypotheses statements of this study.

Condition A: Developmentally "Normal" Children

The attractive and unattractive children in Condition A were considered not to possess facial traits that were diagnostic for developmental dysfunction. For photographs of children considered to be developmentally normal:

Hypothesis 1: The functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health will be significantly higher for attractive children than for unattractive children across all groups.

Hypothesis 2: There will be no difference in the functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health ratings of the four preparation groups.

Condition B: Developmentally "Abnormal" Children

The attractive and unattractive children in Condition B were considered to possess facial traits that were diagnostic for developmental dysfunction. For photographs of children considered to be developmentally abnormal:

Hypothesis 3: The functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health will be significantly higher for attractive

children than for unattractive children across all groups.

Hypothesis 4: There will be no difference in the functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health ratings of four preparation groups.

Condition C: Children with Craniofacial Defects

The children in Condition C were considered to be unattractive children pre-operatively and attractive children post-operatively. The children in the attractive group were the same group of children in the unattractive group after having facial surgery and both groups represented the attractive and unattractive surgical condition. For photographs of children before and after facial surgery:

Hypothesis 5: The functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health will be significantly higher for attractive children than for unattractive children across all groups.

Hypothesis 6: There will be no differences in the functional capability ratings on cognitive competence, motor performance, social competence, emotional stability and health ratings of the four preparation groups.

Conditions A, B, and C

The attractive and unattractive children from all three conditions were considered to represent a range of appearance of all children. Therefore, for all children:

Hypothesis 7: The functional capability ratings on cognitive

competence, motor performance, social competence, emotional stability and health will be significantly higher for attractive children across all groups.

Several factors of the observer may influence the extent which appearance affects assessments made for normal and developmentally abnormal children. Considering all children:

Hypothesis 8: There is a significant relationship between child care worker characteristics including the observer's reported self-comparison, level of preparation and personal experience with exceptional children and the extent that appearance influences intelligence ratings given of normal and developmentally abnormal children.

CHAPTER III

RESULTS

Overview

The results of the data analysis are presented in the following sections. The hypotheses are discussed in accordance with the three conditions described in Chapter II: Conditions A, B, and C were specified as representing those slides of children who (a) are developmentally normal, (b) are developmentally abnormal, and (c) are children with craniofacial anomalies, before and after surgery. For each specified condition, functional capability scores were calculated for each category of attractiveness and unattractiveness and for each of the four professional groups. These conditions are discussed separately, and summarized following those discussions.

Condition A: Attractive and Unattractive Normal Children

Tests of Hypotheses. Hypotheses 1 and 2 dealt with the analysis of functional capability scores for children considered to be developmentally normal who do not possess facial traits that were diagnostic for developmental dysfunction. A summary table for Condition A is shown on Table 3.1a. This three-factor analysis of variance did not yield a significant triple interaction. The between-subjects factor of professional preparation yielded a nonsignificant *F* ratio at the .05 level as did the interaction of preparation-x-appearance. For pictures of normal children, there was a significant interaction of the appearance and capabilities factors.

TABLE 3.1a

Preparation (P) x Appearance (A) x Capabilities (C): 4 x 2 x 5 ANOVR
Summary Table for Condition A (Normal)

Source of Variation	SS	df	MS	F	Significance Level
Between Subjects					
Professional Preparation (P)	5.17	3	1.723	0.392	(NS .05)
Error Between (P)	509.85	116	4.395		
Within Subjects					
Appearance (A)	1612.09	1	1612.088	734.52	($p < .001$)
Preparation x Appearance (PA)	6.72	3	2.240	1.021	(NS .05)
Error Within (PA)	254.59	116	2.195		
Capabilities (C)	38.54	4	9.636	51.127	($p < .001$)
Preparation x Capabilities (PC)	1.86	12	0.155	0.822	(NS .05)
Error Within (PC)	87.45	464	0.188		
Appearance x Capabilities (AC)	5.99	4	1.497	10.237	($p < .01$)
Preparation x Appearance x Capabilities (PAC)	2.31	12	0.192	1.316	(NS .05)
Error Within (PAC)	67.86	464	0.146		

Following the significant F ratio for the interaction of appearance with capabilities, F 94,182 = 10.24, $p < .01$, Tukey W S D post hoc analyses ($p < .01$) were used to determine the significance of differences between means. These are shown in Tables 3.1b and 3.1c.

For Condition A, hypothesis 1 stated that attractive normal children would receive higher functional capability scores by all preservice child care workers than unattractive normal children. The mean comparisons for all functional capability scores of cognitive competence (COG), perceptual motor competence (PMO), social competence (SOC), emotional competence (EMO), and health (HEA) all yielded W S D scores which exceeded the .01 significance level shown in Tables 3.1b.

Post hoc follow-ups of capability scores by levels of attractiveness yielded several significant differences, shown in Table 3.1c. For attractive children, the mean cognitive ($\bar{X}$COG = 5.43) scores differed significantly ($p < .01$) from all other mean competence scores. The mean perceptual motor ($\bar{X}$PMO = 5.66), social ($\bar{X}$SOC = 5.70) and emotional scores ($\bar{X}$EMO = 5.66) did not significantly differ from one another, however all were significantly higher than cognitive competence ($p < .01$) and significantly lower ($p < .01$) than health. Likewise, the mean health score ($\bar{X}$HEA) = 6.07) was significantly higher ($p < .01$) than all of the capability mean scores.

For unattractive children, the perceptual motor ($\bar{X}$PMO = 3.16), social ($\bar{X}$SOC = 3.24) and cognitive ($\bar{X}$COG = 3.29) mean scores were significantly lower ($p < .01$) than emotional or health mean scores. The mean emotional score ($\bar{X}$EMO = 3.50) was significantly lower ($p < .01$) than the mean health score ($\bar{X}$HEA = 3.68), and significantly higher than the other capabilities. Again the mean health score differed significantly from all of the capabilities ($p < .01$).

TABLE 3.1b

Condition A
Mean Comparisons of Appearance Variable
for Each Functional Capabilities Factor (Normal)

Comparisons	Attractive	Unattractive	Tukey WSD	p
Cognitive Competence (COG)	5.430	3.293	2.137**	$p < .01$
Perceptual Motor Competence (PMO)	5.659	3.163	2.496**	$p < .01$
Social Competence (SOC)	5.659	3.238	2.421**	$p < .01$
Emotional Stability (EMO)	5.664	3.497	2.167**	$p < .01$
Health (HEA)	6.045	3.675	2.370**	$p < .01$

**Wholly Significant Difference must exceed 0.248 to be significant at $p < .01$.

TABLE 3.1c

Condition A
Post hoc Follow-ups on Interaction
of Functional Capabilities by Appearance Factors
Using Duncan's Underlining Notation ($p < .01$)**

	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA
Attractive (Normal)	5.431	5.659	5.699	5.664	6.045
	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$COG	$\bar{X}$EMO	$\bar{X}$HEA
Unattractive	3.163	3.238	3.293	3.497	3.675

**Wholly Significance Difference must exceed 0.172 to be significant at $p < .01$. Underlining notation indicates non-significant comparisons (NS).

Overall, the capability scores each yielded mean scores which were significantly different for attractive and unattractive children. The evidence from these repeated measures suggested a general effect, and hypothesis 1 was supported.

For Condition A, hypothesis 2 stated that there would be no difference in functional capability ratings of attractive and unattractive children who are developmentally normal for pre-service child care workers from four different preparation groups. Since the between-subjects factor of professional preparation yielded a nonsignificant F ratio at the .05 level, as did the interaction of preparation-x-appearance, these data failed to reject the hypothesis of no preparation differences.

Condition B: Attractive and Unattractive "Developmentally Abnormal" Children

Tests of Hypotheses. Hypotheses 3 and 4 dealt with the analysis of functional capability scores for children considered to be developmentally abnormal and who possess facial traits which are diagnostic for developmental dysfunction. A summary table for Condition B is shown on Table 3.2a. This three-factor analysis of variance did not yield a significant triple interaction. The between-subjects factor of professional preparation yielded a nonsignificant F ratio at the .05 level as did the interaction of preparation-x-appearance. For pictures of abnormal children, there was a significant interaction of appearance and capabilities factors.

Following the significant F ratio of interaction of appearance with capabilities, $F(4,176) = 6.46$, $p < .01$, Tukey W S D post hoc

TABLE 3.2a

Preparation (P) x Appearance (A) x Capabilities (C): 4 x 2 x 5 ANOVR
Summary Table for Condition B (Developmentally Abnormal)

Source of Variation	SS	df	MS	F	Significance Level
Between Subjects					
Professional Preparation (P)	10.82	3	3.606	0.744	(NS .05)
Error Between (P)	562.59	116	4.849		
Within Subjects					
Appearance (A)	648.22	1	648.222	490.950	($p < .001$)
Preparation x Appearance (PA)	9.06	3	3.019	2.287	(NS .05)
Error Within (PA)	153.16	116	1.320		
Capabilities (C)	53.68	4	13.464	47.925	($p < .001$)
Preparation x Capabilities (PC)	1.49	12	0.123	0.441	(NS .05)
Error Within (PC)	130.36	464	0.281		
Appearance x Capabilities (AC)	2.07	4	0.517	6.463	($p < .01$)
Preparation x Appearance x Capabilities (PAC)	0.85	12	.0704	0.881	(NS .05)
Error Within (PAC)	37.12	464	.0881		

analyses ($p < .01$) were used to determine differences in mean comparisons. These are shown in Tables 3.2b and 3.2c. For Condition B, hypothesis 3 stated that attractive, abnormal children would receive higher functional capability scores by all pre-service child care workers than unattractive abnormal children. The means for functional capabilities scores for attractive and unattractive children all yielded W S D scores which exceeded the significance level. Differences were demonstrated in scores of cognitive competence (COG), perceptual motor competence (PMO), social competence (SOC), emotional competence (EMO) and health (HEA) for the appearance factor of developmentally abnormal children.

Post hoc analyses of capability scores by appearance yielded several significant differences. For attractive children, the mean cognitive ($\overline{X}$COG = 4.67) and perceptual motor scores ($\overline{X}$PMO = 4.57) differed significantly ($p < .01$) from emotional competence and health scores. The motor score also differed from the social competence score ($\overline{X}$SOC = 4.79). The emotional competence ($\overline{X}$EMO = 4.98) and health scores ($\overline{X}$HEA = 5.06) were each significantly higher ($p < .01$) than the other capabilities, although not from each other.

For unattractive children, the mean cognitive ($\overline{X}$COG = 3.15) and perceptual motor scores ($\overline{X}$PMO = 3.02) differed significantly ($p < .01$) from the other competence scores, although not from each other. The social competence score ($\overline{X}$SOC = 3.33) was significantly higher than cognitive and motor scores and significantly lower than the emotional competence and health scores ($p < .01$). The emotional competence ($\overline{X}$EMO = 3.67) and health scores ($\overline{X}$HEA = 3.56) were each significantly higher than the other scores.

TABLE 3.2b

Condition B
Mean Comparisons of Appearance Variable for Each Functional Capabilities Factor (Developmentally Abnormal)

Comparisons	Attractive	Unattractive	Tukey WSD	p
Cognitive Competence (COG)	4.668	3.154	1.514**	$p < .01$
Perceptual Motor Competence (PMO)	4.567	3.015	1.552**	$p < .01$
Social Competence (SOC)	4.792	3.333	1.459**	$p < .01$
Emotional Stability (EMO)	4.983	3.668	1.315**	$p < .01$
Health (HEA)	5.063	3.553	1.510**	$p < .01$

**Wholly Significant Difference must exceed 0.191 to be significant at $p < .01$

TABLE 3.2c

Condition B
Post hoc Follow-ups on Interaction of Functional Capabilities by Appearance Factors Using Duncan's Underlining Notation ($p < .01$)**

	$\overline{X}$PMO	$\overline{X}$COG	$\overline{X}$SOC	$\overline{X}$EMO	$\overline{X}$HEA
Attractive (Developmentally Abnormal)	4.567	4.668	4.792	4.983	5.063
Unattractive (Developmentally Abnormal)	3.015	3.154	3.333	3.668	3.553

**Wholly Significant Difference must exceed 0.178 to be significant at $p < .01$. Underlining notation indicates non-significant comparisons (NS).

Overall, the capabilities scores each yielded mean scores which were significantly different for attractive and unattractive children.

For Condition B, hypothesis 4 stated that there would be no differences in functional capability ratings of attractive and unattractive children who are developmentally abnormal for pre-service child care workers from four different preparation groups. The between subjects factor of professional preparation yielded a nonsignificant F ratio at the .05 level, and there was no interaction of the between subjects factor with any other factor. These data failed to reject the hypothesis of no preparation differences.

Condition C: Children Before and After Craniofacial Surgery

Tests of Hypotheses. Hypotheses 5 and 6 dealt with the analysis of functional capability scores for the same group of children before and after craniofacial surgery. The post-operative pictures of the children were treated as "attractive" photos and the pre-operative pictures of the same children were treated as "unattractive" photos, for the surgical condition. A summary table for Condition C is shown on Table 3.3a. This three-factor analysis of variance did not yield a significant triple interaction. The between subjects factor of professional preparation did not produce a significant F ratio at the .05 level for these pictures, nor did any interaction with the between subject factor. For pictures of children with facial anomalies, there was a significant interaction of appearance and capabilities factors.

Children before craniofacial surgery were considered to be unattractive children and received appearance scores which validated this assumption. The post-surgical photographs of the same children were considered "conservatively" attractive, and they too received appearance scores which appropriately validated differences between the two groups.

For Condition C, hypothesis 5 predicted that functional capability ratings given to post-operative (attractive) children would be higher than functional capability ratings given to pre-operative (unattractive) children by all pre-service child care workers, for children receiving facial surgery. The results revealed that pictures of children following craniofacial surgery received higher capability scores in functioning than their unattractive pictures taken before the operations. The interaction of appearance and capabilities yielded a significant F ratio, $(4,181) = 10.55$, $p < .01$). Post hoc follow-ups of Tukey W S D mean comparisons were performed on the mean scores. These are shown in Tables 3.3b and 3.3c.

Post hoc analyses of competence scores by appearance were performed. For the attractive post-surgical ratings, only the mean of the health scores ($\bar{X}$HEA = 5.56) was found to differ from the means for the other ratings ($p < .01$). For the unattractive pictures of the same children before surgery, the mean health ($\bar{X}$HEA = 3.72) and mean emotional competence scores ($\bar{X}$EMO = 3.59) were both significantly higher than the mean cognitive competence ($\bar{X}$COG = 3.36), motor competence ($\bar{X}$PMO = 3.30), or social competence scores ($\bar{X}$SOC = 3.37), $p < .01$. The latter means did not differ from one another.

TABLE 3.3a

Preparation (P) x Appearance (A) x Capabilities (C): 4 x 2 x 5 ANOVR
Summary Table for Condition C (Before and After Surgery)

Source of Variation	SS	df	MS	F	Significance Level
Between Subjects					
Professional Preparation (P)	12.07	3	4.022	0.949	(NS .05)
Error Between (P)	491.43	116	4.236	627.94	
Within Subjects					
Appearance (A)	943.94	1	943.942	1.133	($p < .001$)
Preparation x Appearance (PA)	5.11	3	1.703	33.913	
Error Within (PA)	174.38	116	1.503	1.117	
Capabilities (C)	27.28	4	6.819	10.55	($p < .001$)
Preparation x Capabilities (PC)	2.69	12	0.225	0.826	(NS .05)
Error Within (PC)	93.29	464	0.201		
Appearance x Capabilities (AC)	4.14	4	1.035		($p < .01$)
Preparation x Appearance x Capabilities (PAC)	0.97	12	.0811		(NS .05)
Error Within (PAC)	45.52	464	.0981		

TABLE 3.3b

Condition C
Mean Comparisons of Appearance Variable for Each Functional Capabilities Factor (Craniofacial Surgery)

Comparisons	Attractive	Unattractive	Tukey WSD	p
Cognitive Competence (COG)	5.129	3.362	1.767**	$p < .01$
Perceptual Motor Compenence (PMO)	5.202	3.304	1.898**	$p < .01$
Social Competence (SOC)	5.175	3.367	1.808**	$p < .01$
Emotional Stability (EMO)	5.141	3.586	1.555**	$p < .01$
Health (HEA)	5.565	3.725	1.840**	$p < .01$

**Wholly Significant Difference must exceed .025 to be significant at $p < .01$

TABLE 3.3c

Condition C
Post hoc Follow-ups on Interactions of Functional Capabilities by Appearance Factors Using Duncan's Underlining Notation ($p < .01$)**

	$\bar{X}$COG	$\bar{X}$EMO	$\bar{X}$SOC	$\bar{X}$PMO	$\bar{X}$HEA
Attractive (After Cosmetic Surgery)	5.129	2.140	5.175	5.202	5.565
	$\bar{X}$PMO	$\bar{X}$COG	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA
Unattractive (Before Cosmetic Surgery)	3.304	3.362	3.366	3.586	3.725

**Wholly Significant Difference must exceed 0.178 to be significant at $p < .01$. Underlining notation indicates nonsignificant comparisons (NS).

Overall, the capabilities scores each yielded mean scores which were significantly different for attractive and unattractive children. The evidence from these repeated measures suggested a general effect, and hypothesis 5 was supported.

For the surgical condition, hypothesis 6 stated that there would be no differences in functional capability ratings of attractive and unattractive children for pre-service child care workers from four different preparation groups. The between subjects factor of professional preparation yielded a nonsignificant F ratio at the .05 level, and there was no interaction of the between subjects factor with any other factor. These data failed to reject the hypothesis of no preparation differences.

Physical Attractiveness and Functional Capabilities

Summary of Conditions A, B, and C. Hypothesis 7 combines hypotheses 1, 3, and 5 to make a general statement concerning the variable of physical appearance. To summarize the findings from each of these hypotheses, it can be stated that the effects of physical attractiveness at each level of capability produced statistically significant differences at the .01 level, for each condition described. In addition, the interactions from appearance with capabilities added support to the overall findings. The dependent variables rated showed inter-competence differences, and therefore were not comparisons of the same construct. There were significant differences for all five variables identified between attractive and unattractive children. Repeatedly, physical appearance was a powerful factor in all pre-service child care worker's judgments of general functional capability. Therefore, hypothesis 7 is considered supported.

The Relationship of Professional Preparation and Assessments of Capabilities

Hypotheses 2, 4, and 6 tested the relationship of preparation and assessments of children as a between-subjects factor in the analysis of variance for each condition. Each hypothesis stated that there would be no differences in assessments of attractive and unattractive children from personnel of different professional training. For normal children, developmentally abnormal children and surgical cases, the level of preparation of the subjects had no main effect on their assessments. The absence of any interaction between preparation and the physical appearance factors provided no support for rejecting the null hypothesis. The failure to reject the null hypothesis in Condition B suggested that supposedly specially prepared personnel are not discriminating between diagnostic and nondiagnostic features.

Characteristics of Subjects and Influence of Appearance on Intelligence Judgments. Hypothesis 8 predicted that there was a relationship between child care worker's characteristics and influence of facial appearance. In the second analysis, the relationship of characteristics of the pre-service child care worker including self-ratings, level of preparation and experience, with the extent that appearance influences judgment of intelligence was tested. A stepwise multiple regression was conducted for the total sample (n = 120) to determine whether any characteristics of the subjects would contribute to prediction of "sensitivity" or "reactivity" to physical appearance measured as the index of influence. Tables 3.4a and 3.4b

report the results of the third step of the multiple step problem. Only three variables were selected for this preliminary exploratory procedure. The order of selection was self-comparison, level of professional preparation for working with exceptional children, and personal experience.

The results of the multiple regression analysis for independent measures were most unsatisfying. Only 3 per cent of the variation in the index of influence can be explained by the variables entered into the equation and the F ratio for the three characteristics is non-significant at the .05 level.

The preparation and experience variables accounted for no change in the regression analysis. These two variables were inter-correlated and results provided little support for the contention that any meaningful relationship existed.

The lack of results was attributable to a variety of sources. The measurement issue has already been discussed in Chapter II. The relationship between professional preparation and appearance has already been shown to be virtually negligible in the first analysis, and the experience variable was, in fact, highly correlated with the stratified levels of preparation. Also, senior and graduate student subjects certainly may not be the best representatives of their respective professional groups.

In summary, it is necessary to reject hypothesis 8. Although a possible relationship or trend of self-characteristics with judging others may exist, these data do not satisfactorily support any specific assumption.

TABLE 3.4a

Step-Wise Multiple Regression Analysis
for Index of Influence (N=120)

Step 3	
Multiple R	.17
R Square	.03
Standard Error	.15

Analysis of Variance

	df	Sum of Squares	Mean Square	F ratio
Regression	3	.076	.025	1.136
Residual	116	2.595	.022	

Variables in Equation

Variable	Coefficient	Std. Error	F to Remove
Self Score	0.16	.002	3.070
Level of Prep	0.08	.016	0.454
Experience	-0.05	.022	0.195

TABLE 3.4b

Correlations of Subject Characteristic Variables
and Index of Influence (N=120)

Variable				
1. Self score	1.00	-0.06	-0.02	0.16[b]
2. Level of preparation		1.00	0.67[a]	0.04
3. Personal Experience			1.00	00.003
4. Index of Influence				1.00

[a] $p < .001$
[b] $p < .10$

CHAPTER IV

DISCUSSION

General findings of the study may be summarized as follows: (1) There was a significant relationship between facial appearance and assessments of functional capability given by all pre-service child care workers. (2) Children with unattractive facial appearance were consistently given lower ratings than children with attractive facial appearance. (3) There were significant differences between various functional capability scores for attractive and unattractive children. (4) There was no evidence that the effects of professional preparation made any meaningful contribution to the judgments of capability of attractive and unattractive children. (5) The results were inconclusive concerning the relationship between personal characteristics of the subjects and the extent to which they were influenced by appearance in judging intelligence, at least as measured here.

Appearance and Assessments

In the field of child care, professionals utilize their observation skills, combined with other techniques, to formulate their opinions, "objective" assessments, or expectations for the child. What one sees provides the basis for how one responds in diagnostic and professional activities. Physical appearance plays a significant part in shaping the professional's impression. Attractiveness and unattractiveness are potent elicitors of predictable impressions.

The facially attractive child brings about positive responses. Likewise, the facially unattractive child, particularly the abnormal looking child, produces a general negative response set. Unattractiveness of facial traits, the "social-mediating organ," triggers lower judgments in areas of cognitive, social, and motor competence. Clearly, this response set becomes a handicap for the "esthetically handicapped child." Precisely which characteristic plays the more important role is still open to question. In any case, the handicapped child with a visible stigma is socially disadvantaged and limited.

Attractiveness and Unattractiveness as Powerful Factors

The attractiveness or unattractiveness of a child's face consistently produces significant differences in judgments for each of the three conditional groups identified. Because of the importance of recognizing identifiable clues in the face, this study included two groups of normal children, two groups of developmentally abnormal children and one group of the same children before and after cosmetic surgery, in order to expand the variable of appearance and include the notion of discriminating clinical clues in the face.

All three conditions provided conclusive findings that facial appearance affected assessments of functional capabilities by all subjects. Of the three conditions, the group of children with facial surgery (Condition C) provided the most stringent testing criteria for the appearance variables. Other than age differences because of the post-surgical pictures having been taken at a later date, the pictures represented children categorized on the appearance variables only:

attractiveness and unattractiveness. Extraneous variables are controlled for by the fact that the two groups are the same children at two points in time, with appearance manipulated. It may therefore be concluded with considerable confidence that attractive children were judged by the subjects, including pre-professional child care workers, to be more capable cognitively, social motorically, more emotionally stable, and to be healthier than unattractive children.

The Differential Clues in the Face

The face provides an assortment of information to the professional. Estimation of competencies require the observer to sort different stimuli. The observer organizes the stimuli in some manner to differentiate clues of capabilities. The same face, therefore, can produce responses of different capabilities, depending upon the ambiguity of the stimuli and the task.

Wright (1960) stated that the degree of ambiguity or unreliability of the stimulus information can vary. The more clear-cut and reliable the input information, the more effective it will be in structuring the perception. As the features of the stimuli become more amibguous, the subject's perceptions increasingly adhere to his or her own expectations. The expectations become an organizing principle according to which facts are made to fit.

The mean rating scales of cognitive capability of attractive normal children was comparatively lower than the other identified dimensions. All subjects perceived the attractive children as having less intelligence and lower school achievement than motor skills, social competence, personality or health, though the mean rating corresponded

to a level higher than the 50th percentile.

The normal attractive children also were rated higher in health than the remaining dimensions. This was true for the children following craniofacial surgery as well. The health dimension and emotional competence scores were both significantly higher than the other areas of functioning for all unattractive and developmentally abnormal attractive children. This may have been due to the fact that observers were given a vague task in comparing the child's health, based on the fewest clues. Physical appearance is the only stimulus controlled for in the slides. According to Wright (1960) the organizing principle would be the observer's own expectation in perceiving the stimuli. This might explain then that the observer would "expect" the child was healthy unless something visibly indicated otherwise.

Characteristics of the Professional

Differences in Training

The results of the analyses provided no indication that professional preparation made any difference in pre-service child care worker's observation skills or in their ability to discriminate diagnostic cues. The higher preparation level child care professionals did not differ from the lower preparation subjects for any of the functional capability scores of attractive and unattractive children under any of the three conditions specified. As such, the findings do not provide any conclusive evidence that specialized training makes a difference. The responses from the specially prepared groups did not

differ from those of pre-professionals with less exposure or education. It is not possible to say from these data that programs providing highly specialized training in assessment of exceptional children would have no effect. One would expect that training would make a difference in one's ability to discriminate important from unesthetic stigmata in diagnosing dysfunctional conditions. The training here, however, was neither controlled nor documented and could only be assumed to be appropriate based upon the criteria listed for the selection of subjects. Further, the students selected as subjects do not represent the highest level of professional expertise that exists in these professional areas.

The limitation of the training variable for this study would suggest that a carefully planned analysis of training effects should be undertaken to establish whether or not specialized training in objective assessment could make a difference in judgments of performance. Under experimental conditions the specific observation skills could be taught in an experimental and control group design. Subsequent assessments of functional capability ratings would provide a more direct test of the hypothesis.

Self-Comparison, Preparation and Experience

The relationship between self-characteristics, preparation and experience and the extent of influence that appearance has on ratings of intelligence also were vague and unremarkable.

There is apparently no support at all for any contribution of one's self-comparison rating, level of preparation, or personal experience to one's influence by appearance. Further work would need to

be done to identify any salient characteristics of the objective observer who would be uninfluenced by a child's attractiveness in judging the child's competence.

Limitations of the Study

There are several methodological issues that must be considered in this study. These will be discussed as threats to internal validity and threats to external validity of the designs and procedures.

Threats to Internal Validity

There are relatively few factors in the design of this study that threaten internal validity. The study was conducted from a plan that attempted to optimize control and minimize error variance. The six categories and multiple slides selected for each of them clearly differentiated the independent variables of attractiveness and unattractiveness and sorted them for conditions of development, e.g., normal, developmentally abnormal and pre- post- surgical. These provided the stimuli which when presented to subjects from different stratified professional preservice groups would also test for differences in preparation. All in all, they provided a reasonably valid procedure that facilitated multiple responses.

The five response variables were identified as functional capabilities. These five mean scores in total represented a generalized response set for the observers in rating the categories of slides. The measures were designed as scales within the same metric parameters

with instructions to the observer such that a "3" from one scale such as "intelligence," meant the same as a "3" from another scale such as "health." The analysis, therefore, warranted a univariate procedure. On the other hand, the observer may not have perceived a normal distribution for certain variables such as "health." One might have considered a child viewed in the slide to be either "healthy" or "not healthy," and probably not the latter unless there were some observable characteristics to indicate potential illness. It is likely that all five variables possessed different perceived distributions as well. This illustrates a possible artifact in the analysis due to measurement inconsistencies in comparing the individual functional capabilities with each other as a univariate procedure. The more meaningful data, however, were the generalized response patterns of functional capabilities, and these still provided valid and sufficient information from the analysis.

The principal threat to internal validity is associated with the lack of control over the independent variable of training. Given the nature of the study, subjects could not be randomly assigned to training conditions. The ex post facto nature of this variable leaves open to question both the pretraining equivalence of the four groups and the existence of the "treatment."

Threats to External Validity

Several issues must be discussed which threaten external validity. A restriction on the generalizability of results is largely due to issues in sample selection. All students were subjects from the Pennsylvania State University in professional training. They did not

necessarily represent their respective professional groups, nor did they typify the many different professional and educational programs available in this country. They were, however, a suitable sample for purposes of efficient data collection and they did differentiate on professional background by multiple eligibility criteria. Upon completing this preliminary work, including the development of instruments and collection of slides, this investigator has designed the study to readily move to naturally occurring settings in which handicapped children are found and the testing of the professional personnel working there.

Additional limitations of this investigation arise from the stimulus materials used. The children selected as attractive and unattractive children are clearly differentiated on those variables. Although the attractiveness scores on the 101 original slide group were almost normally distributed, the children in the slides might not represent the typical range of children seen in everyday life. Many of the children's pictures selected were of deviations that are relatively infrequent. Observers who were not familiar with some handicapped children may well have been influenced by their inexperience. The range of children in the slide presentation may have lacked the ecological validity of the range of children typically in the general regular classroom.

Finally, the artificial nature of the task must be considered as a threat to external validity. Participants are directed into a forced choice of assessing or estimating the child in the picture with no other information. The attractiveness or unattractiveness of the child are the only stimuli provided to the observer. In the natural

setting, an attractive or unattractive child would bring behavior, communication, etc. into the social interaction. The child care professional may not, in fact, focus on appearance at all if provided with additional information. In any case, the potency of attractiveness or unattractiveness would most likely be diluted.

Implications of the Study

The results from this study, as well as the repeated variations of the same findings from similar studies, present questions to consider for developing specialized training in assessment of children. Would special training in objective assessment make any difference in the responses of child care service workers to facially unattractive children? Would the service personnel look for more meaningful clues in the face to accurately, or at least approximately, reflect the precise nature of the child's condition, rather than generalizing from prejudicial attitudes? Are any characteristic factors important in the process of selecting child care personnel to work with handicapped children?

The effects of facial appearance on judgments of performance have been confidently substantiated from these data. However, the effects of special training in assessment of special children can not be supported by these results, nor can the factors selected here predict the extent to which an individual is influenced by appearance. There is good reason to believe that careful training might affect some change in the stereotypic responses to appearance, at least from an

assessment standpoint if not attitudinally.

For future research, a carefully planned program on "the face in clinical diagnosis" might provide information necessary in discriminating salient facial clues from unesthetic ones in assessment. Only knowing about one's own automatic response to unattractiveness would not necessarily guarantee changing that response. With a specified program, child care staff would be trained to observe the face of a child objectively and hopefully without bias. In this manner, also, the investigation providing the training would control the content and quality of the training variable.

Teachers, nurses and special educators apparently need to understand the impact of attractiveness on their own judgments, as well as on others. For teachers, recognizing that the unattractive child in the class has had the least attention spent on his project would precede a change in the amount of time spent with that child in his or her next endeavor. For nurses, combing hair and brushing teeth for the disheveled retarded child would create a dramatic change in the interactions between that child and other professionals or family members.

The facially stigmatized child will continue to be poorly rated in performance, intentionally shunned and socially handicapped until we can better integrate the whole child, with his features, into the environment. The quality of the staff employed in child care settings will determine the outcome of that integrating effort.

normal, unattractive/normal, attractive/abnormal, unattractive/abnormal, and pre- and post- operative slides of children with facial defects. Differences in assessments of children by preparation of participants were tested. Personal characteristics of the participants, level of preparation in special child care, and personal experience with exceptional children were explored as predictors of "sensitivity" to appearance in judgments of intelligence.

Repeatedly, this study demonstrated that all children with unattractive faces, normal and abnormal, stimulated generalized and negative responses from pre-service child care workers, while attractive children, normal and abnormal, produced generally positive responses. No meaningful conclusions could be drawn from these data between levels of professional preparation and assessments of children, although the literature would support the need for future research in training objective observation skills for professionals in child care. There did not seem to be any relationship between the personal characteristics of the observer selected here, including self-comparison ratings, level of preparation, and experience, and the extent to which the observer is influenced by appearance to judge intelligence.

The next steps in this research would be to ascertain the sequences which follow identification of biased response sets. With a focus on the quality of staff in mainstreamed programs, the problem takes on the following questions:

(1) do child care staff differentially treat the visibly impaired children and the nonvisibly impaired children?

(2) do children with visible anomalies respond to differential treatment? and

(3) do these differential behaviors of the social environment combine with constrained environments to augment the handicap or interfere with otherwise normal development?

Applications

The "reactivity" of the social environment becomes an important issue in relationship to the "mainstreaming" emphasis. This sensitivity to potential stereotype reactions was explored in this study and provided information which can be applied in the natural settings of exceptional children and "normal" but less attractive children. With the trend toward mainstreaming, the integrated settings of handicapped and nonhandicapped children will provide child care workers with a wider range of physical and physiognomic variation.

Professionals in child care service need to be aware of their automatic negative predictions for those individuals who may possess deviant physical traits. Reactions to physical stigmata are rarely hidden. Children are well aware of their differences by the responses they evoke in others which may, unfortunately, interfere with their own development.

By recognizing that a generalized negative response set does exist for facially deviant children, teachers can include into their daily activities procedures to guard against their own and children's stereotypic responses. Careful consideration should be given to incorporate information concerning stereotypic social behavior into curricula of workers in child care. Contact with children alone or

general preparation in assessment of problems is not sufficient to guard against personal reactivity to appearance. Special training programs to supplement assessment skills training should be developed to provide to individuals who work with children the knowledge of their own biases and the tools to modify these potentially harmful attitudes.

Today, the special child's social world is expanding. Many handicapped children who have been formerly isolated will be mixed into settings of professionals with minimal previous exposure to impairments and disabilities. These competent professionals will be severely limited in their ability to care for these children unless they are provided with adequate and appropriate training to deal with new problems. Along with functional involvement, the children may also introduce unesthetic stimuli to the social environment. This study has demonstrated the potency of facial unattractiveness to the adult social environment that precipitates general negative responses. It becomes especially crucial to plan for training the multiprofessionals involved in special child care to be less "reactive" to deviant characteristics of the exceptional child, along with the new skills necessary to deal with this child's needs.

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APPENDIX A

Materials for Procedure

THE PENNSYLVANIA STATE UNIVERSITY
COLLEGE OF HUMAN DEVELOPMENT
UNIVERSITY PARK, PENNSYLVANIA 16802

Division of Individual and Family Studies
S-110 Henderson Human Development Building

Area Code 814
865-1447

EXPLANATION OF THE INVESTIGATION

Dear Participant,

All children are unique. Each child possesses characteristics which separate him/her from the others and contribute to this uniqueness. These characteristics include the way he/she looks, or the outward appearance. Much of this appearance can be utilized in assessing the child.

You are going to be shown several slides of children in a brief slide presentation. We would like to evaluate your observational skills. We will be asking you to make judgmental estimates on the basis of the photograph of the child you are presented with. These children will vary in facial appearance and abilities, as all children do.

We will also be asking you several questions about yourself, and how you would rate yourself on several dimensions.

You may withdraw at any time during the study. Your only participation in the study will be the slide presentation and filling out rating scales of what you are seeing during the presentation. We are not anticipating that you would experience any discomfort or adverse effects from the slide demonstration, but, if you should wish to discontinue at any time to leave the session, you may withdraw. We plan to explain the intentions of the investigation at the conclusion of the session.

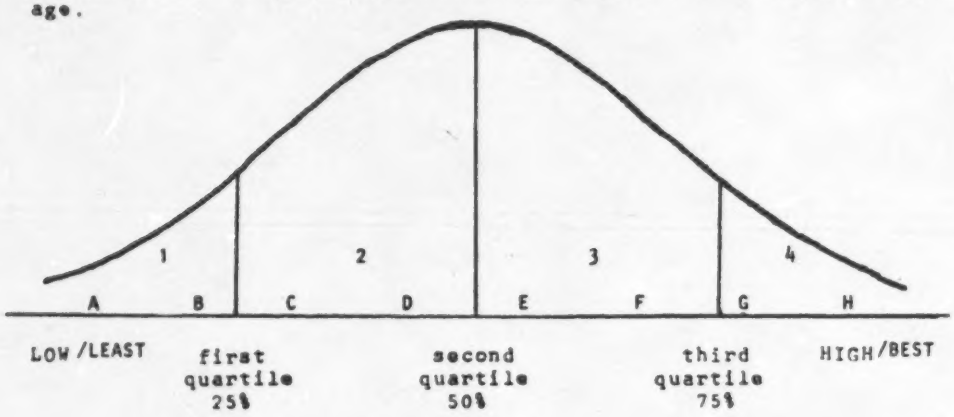
Your total participation time should not exceed one hour.

THANK YOU VERY MUCH FOR YOUR COOPERATION AND TIME.

VERONICA DECAROLIS FEEG

INTRODUCTION

All children are unique. Each child possesses characteristics which separate him/her from the others and contribute to this uniqueness. These characteristics may be represented in the population of all children in a "normally" distributed manner. For example, a child's height at a given age can be compared to the heights of all children of the same age and represented as a quartile: the child's height in measurement would fall in the upper quartile of heights (4) if the child is taller than 75% of the population of children his own age.

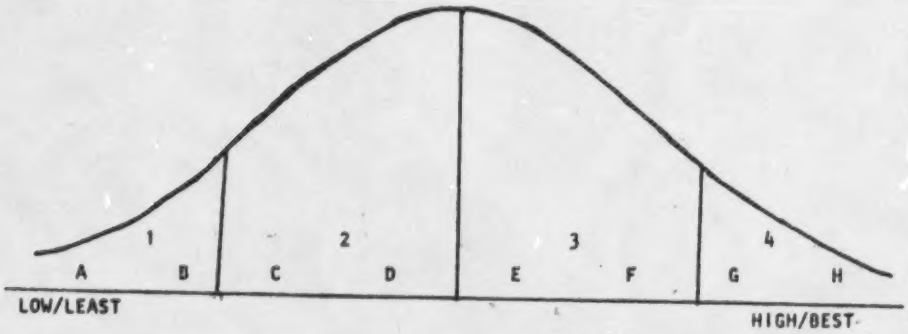


If the child is shorter in height than 75% of the population, his height might be represented below the first quartile (1).

You are about to view 34 slides of children in the next hour. We would like to evaluate your observational skills. Based on a quartile comparison of specific characteristics of children, please judge where the child would rank if he were compared to the population of all children on the following listed dimensions:

(1) intelligence
(2) appearance
(3) school achievement
(4) motor performance
(5) social competence
(6) emotional stability
(7) physical coordination
(8) health
(9) athletic ability
(10) personality

PERSONAL COMPARISON



USING THE ABOVE DISTRIBUTION BANDS, PLEASE CIRCLE WHERE YOU MIGHT RATE YOURSELF AS YOU WOULD COMPARE YOURSELF TO OTHERS ON THE FOLLOWING DIMENSIONS:

(1) intelligence.....A B C D E F G H

(2) general appearance .....A B C D E F G H

(3) academic performance.....A B C D E F G H

(4) work satisfaction.....A B C D E F G H

(5) skills with children.....A B C D E F G H

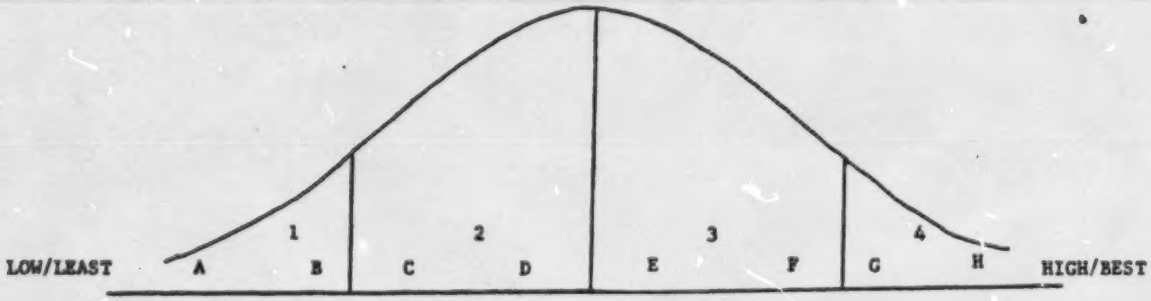
(6) interpersonal effectiveness..A B C D E F G H

(7) assertiveness.....A B C D E F G H

(8) self-confidence.....A B C D E F G H

(9) flexibility.....A B C D E F G H

(10) personality.....A B C D E F G H



RATING SHEET

Circle your assessment of the following:	SLIDE # 1	SLIDE # 2	SLIDE # 3	SLIDE # 4
(1) intelligence	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(2) overall appearance	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(3) school achievement	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(4) motor performance	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(5) social competence	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(6) emotional stability	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(7) physical coordination	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(8) health	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(9) athletic ability	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H
(10) personality	A B C D E F G H	A B C D E F G H	A B C D E F G H	A B C D E F G H

Sample Score Sheet

PERSONAL PROFILE

GENERAL INFORMATION

1. Age: _____
2. Sex: _____
3. Number of Siblings: _____
4. Are you a parent? _____
5. Present education status: (Check one)
   Presently undergraduate _____ Term _____
   Presently post baccalaureate _____
   Post master's _____
6. Program/major: _____
7. Have you ever had any formal training in assessment of young children? If so, explain:

   _____

8. Have you had any formal training, professional/paid or practicum experience working with young children?

   _____

   young handicapped children?

   _____
9. Have you had any personal experience with young handicapped children?

   _____
10. How important is it for you to look nice?

    _____
11. How important is a person's appearance to others, do you think?

    _____
12. Please record the last four digits of your social security number.

Established Categories of Diagnostic-Abnormal and Non-Diagnostic-Normal in Attractive and Unattractive Cases

	Attractiveness Score	
	Mean	Variance
GROUP 1: Attractive-Normal		
Case #1		
-2.8 year old child photographed in the park. No distinguishing facial characteristics or behaviors; apparently normal development for age.	4.43	.507
Case #2		
-3.5 year old child photographed in the home. No distinguishing facial characteristics or behaviors. Attends regular preschool. Apparently normal development for age.	4.25	.500
Case #3		
-10 year old child photographed in the home. No distinguishing facial characteristics or behaviors. Attends regular school. Grade appropriate for age.	4.15	.430
Case #4		
-5 year old child photographed in the home. No distinguishing facial characteristics or behaviors. Attends regular school. Grade appropriate for age.	3.20	.164
Case #5		
-1.5 year old child photographed in clinic. Post-operative picture of child with Crouzon's Syndrome. Described in records as having normal and age appropriate developmental history.	2.98	.435

	Attractiveness Score	
	Mean	Variance
GROUP 2: Unattractive-Normal		
Case #6		
-1.9 year old child photographed in clinic. Post-operative picture of child with Crouzon's Syndrome. Operated at 14 months. Described in records as having normal and age appropriate developmental history.	2.20	.472
Case #7		
-8.9 year old child photographed in clinic. Pre-operative picture of child with Crouzon's Syndrome. Described in records as a shy, withdrawn child. WAIS scores: VIQ 103, PIQ 103, FSIQ 103.	1.95	.305
Case #8		
-4.0 year old child photographed in clinic. Post-operative picture of child with bilateral hypertelorism and bifid nose.[2] Described in records as bright child, grade appropriate, with normal developmental history.	1.60	.297
Case #9		
-6.6 year old child photographed in clinic. Post-operative picture of child with bilateral hypertelorism, naso-ocular clefts, repaired bilateral cleft lip and palate. Described in records as a verbal and precocious child. Lives with elderly foster family and has had difficulty with school placement due to facial appearance, however facial defects not directly linked to any specific organic abnormality.	1.55	.562
Case #10		
-10.2 year old child photographed in clinic. Pre-operative picture of child with craniometaphysial dysplasia.[3] Described in records as apparently well-adjusted child, considering her appearance, grade appropriate in regular school with reported average or low average intelligence.	1.25	.192

GROUP 3: Attractive-Developmentally Abnormal	Attractiveness Score	
	Mean	Variance
Case #11		
-3.2 year old child photographed in handicapped preschool. Child has congenital neurological defect including communicating hydrocephalus, seizure disorder, and motor delays, absent speech. Diagnostic features include size and shape of head, abnormal interpupillary distance, and teeth affected by dilantin.	3.53	.410
Case #12		
-4.8 year old child photographed in handicapped preschool. Child has congenital neurological defect including autistic like behavior, muscular uncoordination, and lack of speech. Diagnostic facial features include low set ears, general atypical facies, and abnormal interpupillary distance.	3.15	.43
Case #13		
-approximately 2.5 year old child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Trisomy 18, Downs' Syndrome. Diagnostic facial traits include downward slant of palpebral fissures, epicanthal folds, size and shape of head.	3.13	.420
Case #14		
-1.0 year old child photographed in the home. Child has had genetic confirmation of Downs' Syndrome. Diagnostic facial features include size and shape of face, downward slant of palpebral fissures, epicanthal folds. Bayley Infant Developmental Scales demonstrated 2 to 4 month delays in mental and motor performance.	3.13	.728
Case #15		
-2.5 year old child photographed in handicapped preschool who was diagnosed with Smith Lemliopitz Syndrome. Diagnostic facial features include size and shape of head, body and face, parrot beak shaped nose, short neck, low set ears. Bayley Infant Developmental Scales (done at 18 months) demonstrated 3 to 6 month delays in mental and motor performance	2.95	.408

	Attractiveness Score	
	Mean	Variance
GROUP 4: Unattractive-Developmentally Abnormal		
Case #16		
-infant child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Trisomy 18, Downs' Syndrome. Diagnostic facial traits include downward slant of palpebral fissures, epicanthal folds, size and shape of head.	2.33	.481
Case #17		
-approximately 5.0 year old child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Hurler's Syndrome, or "Gargoylism," characterized by coarse facial features, hirsutism, broad nasal bridge, and broad mouth.	1.83	.167
Case #18		
-approximately 3.0 year old child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Delange Syndrome, characterized by bushy confluent eyebrows, up-turned nose, wide upper lip, hirsutism, "fish-like" mouth, micrognathia and a dusky hue of the face.	1.67	.267
Case #19		
-approximately 2.5 year old child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Infantile Hypercalcemia, characterized by "elfin-like" facies, broad forehead, epicanthal folds, prominent and pointed ears, broad upper lip, "cupid-bow" mouth and a small mandible.	1.67	.256
Case #20		
-approximately 8.5 year old child. Photograph purchased from Medcom Instructional Slide Presentations: Syndromes in Pediatrics. Child has Microcephalia, characterized by sloping forehead, scalp redundant and furrowed. The ears appear relatively large in contrast to small head.	1.17	.167

GROUP 5: Post-operative Craniofacial Surgery	Attractiveness Mean	Attractiveness Variance
Case #21		
-3.2 year old child photographed in clinic following cranial stripping surgical procedure at 14 months of age and frontal bone advancement at 2 years of age.	3.93	.584
Case #22		
-3.0 year old child photographed in clinic following several surgical procedures including corrective eye surgery.	3.35	.797
Case #23		
-9.0 year old child photographed in clinic following two surgical procedures of onlay bone grafts to frontal bone.	3.05	.408
Case #24		
-19.5 year old child photographed in clinic following several surgical procedures including LeFort III Osteotomy and corrective eye muscle surgery.	2.58	.404

GROUP 6: Pre-operative Craniofacial Surgery	Attractiveness Mean	Attractiveness Variance
Case #26		
-.5 year old child photographed in clinic with Crouzon's Syndrome.	2.30	.318
Case #27		
-.3 year old child photographed in clinic with Apert's Syndrome.[4] (acrocephalosyndactyly).	1.78	.589
Case #28		
-5.5 year old child photographed in clinic with plagiocephaly[5].	2.28	.256
Case #29		
-15.2 year old child photographed in clinic (black and white) with Crouzon's Syndrome.	1.60	.400

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	Attractiveness	
	Mean	Variance
GROUP 5 (continued)		
Case #25		
-17 year old child photographed in clinic following several surgical procedures including LeFort III Osteotomy and onlay bone grafts.	2.45	.664

	Attractiveness	
	Mean	Variance
GROUP 6 (continued)		
Case #30		
-16 year old child photographed in clinic with Crouzon's Syndrome.	1.73	.717

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[1]Crouzon's Syndrome, or craniofacial dysostosis, is characterized by (1) cranial synostosis, (2) bilateral exopthalmus with external strabismus, (3) parrot-beaked nose, and (4) relative mandibular prognathism with drooping lower lip. The facies is easily recognized and is characterized by marked exopthalmos, ocular hypertelorism, and hypoplastic maxilla. This last feature produces a marked relative mandibular prognathism and short upper lip.

[2]Hypertelorism with bifid nose occurs in the embryological development of the face. The interpupillary distance is abnormally wide and the structures of the nose are underdeveloped, possibly split, which gives no projection to the nasal structure.

[3]Craniometaphyseal dysostosis consists of (1) alteractions in the metaphyses is of long bones and (2) bony overgrowth of the face and jaws, especially evident in the paranasal areas. A head that appears rather large, with an extremely broad and flat nasal bridge, ocular hypertelorism, and open mouth, gives the patient a vacuous expression.

[4]Acrocephalosyndactyly is characterized by a short skull of excessive breadth and tower-shaped and webbing of the fingers and toes. The middle third of the face appears flat and underdeveloped producing a relative prognathism. The orbits are flattened, and the eyes tend to be proptosed. The cranium is brachycephalic with a high prominent, steep forehead. Intelligence may or may not be below normal.

[5]Plagiocephaly is characterized by assymetrical bony formation of the face giving a distorted appearance to the midface.

APPENDIX C

Tables of Means for Sex Effects and
Simple Effects from Analysis of Variance

TABLE C.1

Simple ANOVA on Sex Effects for Ratings
in Each Category of Photographs

CONTROL GROUP (Low Preparation)	N	Mean	S.D.	F Value
Attractive/Normal				
Males	9	34.8	3.7	1.04 (NS)
Females	27	35.3	3.8	
Unattractive/Normal				
Males	9	17.7	5.0	1.55 (NS)
Females	27	18.1	4.0	
Attractive/Abnormal				
Males	9	29.4	3.4	1.17 (NS)
Females	27	28.8	3.7	
Unattractive/Abnormal				
Males	9	19.4	3.6	1.13 (NS)
Females	27	19.9	3.8	
SPECIAL ED GROUP (High Preparation)	**N**	**Mean**	**S.D.**	
Attractive/Normal				
Males	9	33.3	3.2	1.06 (NS)
Females	24	34.9	4.4	
Unattractive/Normal				
Males	9	21.3	4.0	1.89 (NS)
Females	24	20.0	4.7	
Attractive/Abnormal				
Males	9	28.9	4.5	1.05 (NS)
Females	24	28.9	4.6	
Unattractive/Abnormal				
Males	9	20.6	4.0	1.44 (NS)
Females	24	20.7	4.8	

TABLE C.2

Condition A: Normal Children
Table of Cell Means for Preparation x Appearance x Capabilities

	Attractive					Unattractive				
	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA
Group A: Controls	5.47	5.74	5.78	5.73	6.15	3.16	3.03	2.93	3.25	3.70
Group B: Teachers	5.46	5.72	5.67	5.65	6.11	3.38	3.14	3.33	3.55	3.71
Group C: Nurses	5.34	5.50	5.55	5.63	5.86	3.16	3.16	3.27	3.44	3.56
Group D: Special Eds.	5.45	5.68	5.64	5.64	6.05	3.47	3.34	3.43	3.74	3.73

TABLE C.3

Condition B: Developmentally Abnormal Children
Table of Cell Means for Preparation x Appearance x Capabilities

	Attractive					Unattractive				
	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA
Group A: Controls	4.73	4.56	4.79	4.96	5.15	3.20	3.14	3.41	3.78	3.75
Group B: Teachers	4.81	4.71	5.01	5.14	5.24	3.21	2.88	3.37	3.59	3.45
Group C: Nurses	4.57	4.48	4.65	4.92	4.93	2.94	2.79	3.11	3.43	3.34
Group D: Special Eds.	4.56	4.52	4.72	4.92	4.94	3.27	3.25	3.43	3.87	3.67

TABLE C.4

Condition C: Children Before and After Facial Surgery
Table of Cell Means for Preparation x Appearance x Capabilities

	Attractive (After)					Unattractive (Before)				
	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA	$\bar{X}$COG	$\bar{X}$PMO	$\bar{X}$SOC	$\bar{X}$EMO	$\bar{X}$HEA
Group A: Controls	5.12	5.15	5.05	4.97	5.49	3.25	3.17	3.10	3.37	3.65
Group B: Teachers	5.12	5.09	5.12	5.07	5.57	3.38	3.18	3.33	3.53	3.66
Group C: Nurses	5.21	5.32	5.32	5.28	5.54	3.24	3.30	3.35	3.57	3.69
Group D: Special Eds.	5.06	5.25	5.21	5.24	5.65	3.58	3.57	3.69	3.88	3.90

VITA

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Education: M.A., New York University, New York, NY, 1975
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Staff Nurse Senior, Research Study Nurse Coordinator, Department of Nursing and Department of Psychopharmacology, New York University Medical Center, New York, NY, 1972-1975.

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